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35. SIP TERMINALS - AASTRA 6700I RANGE

35.1 Overview of the range

Aastra offers one of the most complete SIP terminal ranges in the market: the Aastra 6700i range, with Aastra terminals 6730i, 6731i, 6753i, 6755i, 6757i, 6735i, 6737i and 6739i. These terminals have been designed by Aastra for the business market and are suited both to small and big businesses.

This range has a very interesting technical and economic position and offers a lot of functions.

The Aastra 6700i range is fully compatible with many business SIP telephony platforms and meets all business needs.

Features include a stylish design, a large screen simplifying access to XML applications and excellent voice quality.

The diagram below gives an overview of Aastra 6700i SIP terminals within the Aastra IP/SIP terminal offer.

Position within the Aastra wired (digital and IP) terminal range:

35.2 Strong points of Aastra 6700i

The strong points of Aastra 6700i are:

- It is a **complete terminal range** which can address all the needs of users: from entry-level terminals 6730i to top-of-the-range terminals 6739i which offer added-value services, especially thanks to XML developments.

- Their **navigation keys** facilitate access to the various functions, while the touch screen of terminal 6739i also simplifies navigation in the menus.

- A **message waiting indicator** on the terminals indicates the presence of messages in the voicemail box.

- No matter the model, the terminals have a screen, an incoming call log, an outgoing call log, or even a customised directory.

- The entire range of terminals 6700i is **XML** compatible. Moreover, terminals 6737i and 6757i have a wide screen. Aastra 6739i has a high-definition touch screen and can be used with a set of personalised or generic XML applications, thanks to simplified ergonomics.

  Users can, therefore, have access to standard web services such as subscription to RSS flows from news or stock market sites. For companies, it is also an opportunity to give users access to personalised applications like the corporate directory*, or to vertical applications used to view customers' hotel room bill, room status management, etc.

- Aastra terminals 6753i (from version V2.1), 6755i, 6757i, 6735i, 6737i and 6739i may have **expansion modules** (3 maximum per terminal) which allow the use of additional programmable keys. The modules are of two types: one with paper labels (36 keys), the other with an LCD** (60 keys on 3 pages).

- Terminals 6735i, 6737i and 6739i are **Gigabit** and thus have a 10/100/1000 Ethernet mini-switch.

- Aastra terminals 6753i, 6755i, 6757i, 6735i, 6737i and 6739i are **DHSG compatible**. Thus, using a specific cable***, it is possible to connect some DHSG compatible headsets used to manage off-hook and on-hook directly from the headset. Moreover, terminal 6739i is fitted with a Bluetooth interface, which facilitates user mobility.

- Aastra terminal 6700i uses **Aastra Hi-Q™**, technology and, thus, guarantees an excellent voice quality.

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- The BLF (busy lamp field) function (**SIP RFC4235**) is available on terminals 6700i. This function is used to supervise the status of one or more other terminals through LED. Each terminal declared in an intercom group sends its status to the other terminals in the group which have subscribed to the BLF service. This facilitates team work.

- Aastra terminals 6730i, 6731i, 6735i, 6737i, 6739i, 6753i, 6755i and 6757i have the **free seating** function. This function enables a subscriber to log on to any type of terminal (6700i, M7xx, i7xx, 5300 and 5300ip) without restarting his terminal, and still find his telephony environment (number, call logs, keys, etc.).

* Call by name function available by default on Aastra 6730i, 6731i, 6753i, 6755i, 6757i and 6739i with the Aastra 5000 solution.

** The module with LCD screen is not compatible with 6753i.

*** Cable connected instead of the expansion module.
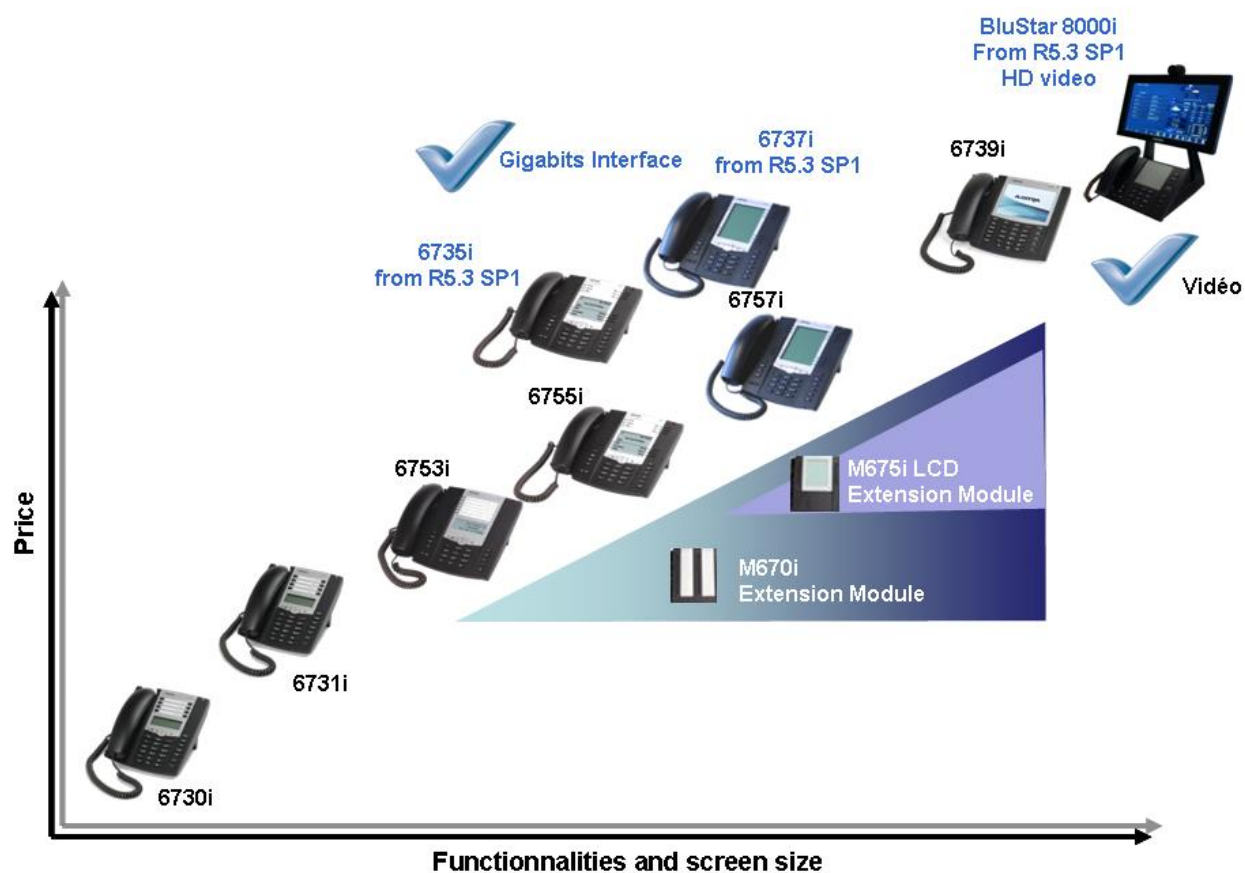
35.3 More SIP integration with A5000 R5.4

Thanks to increased SIP integration, Aastra 5000 R5.4 now lets all SIP users manage multiple calls, including "proprietary users".

Therefore, the following functions are supported by Aastra 6700i series SIP terminals (except 6751i):

- **Indication of waiting calls**, when a call is presented to a busy terminal
- **Multi-key**, multi-CCO or multi-call function: **managing several calls simultaneously** on the same line
- **Multi-line function**: **several lines on the same subscription** with a single SIP licence
- **Combination of several lines and several keys** as simply as on proprietary A5300ip series terminals
- Possibility for a SIP subscription to be part of an association of N managers – M assistants, and to be programmed both as **assistant's terminal** (new R5.4) and as **manager's** terminal (already available as of R5.3).
- An SIP subscription may be part of **several hunt groups** (one line per hunt group).
- **The line-based Aastra 5000 features** are available for multi-line A6700i series terminals, the result of which is that:
    - The call log displays the activity of all the lines.
    - Free-seating is available for multi-line SIP terminals
    - Line-based Aastra 5000 functions are now available on SIP terminals.
- When the XML menu is displayed on A6700i, the **terminal is seen as available**.
- **Ringback tones** (remote terminal busy or unavailable) are broadcast even if the call has been made from a CTI application.
- Therefore, a 6700i series SIP phone can be used as a terminal associated with ACP Web Attendant.
- Support of **announcement and voice guides** from **A5000 R5.4 SP1**. *Please refer to chapter 20 for more detail.*
- 6700i XML functions available as of **A5000 R5.4 SP1***:*
    - Call parking / call pickup function*:* possibility during a call to park a call on a BLF*.* This is useful especially for fixed/mobile convergence*.*
    - Automatic callback is available if the subscriber is busy, does not answer*,* or if a trunk group is busy.
    - During a call*,* the terminal menu proposes to trace a malicious call.

Therefore, Aastra 6700i series SIP terminals are multi-purpose terminals; they can be used:

- As manager/assistant terminals
- For the answering service
- As a terminal associated with ACP Web Attendant
- For intensive users
- For administrative users.

35.4 Aastra 6730i and Aastra 6731i

These are entry-level terminals which offer a flexible and interoperable solution at an affordable price.
They are easy to use and have, among others, a screen and a loudspeaker (full duplex hands-free function).

They can also be easily mounted on a wall.

Aastra terminal 6730i/6731i

Technical characteristics and advantages of Aastra SIP terminals 6730i and 6731i:

- A 3-line LCD screen (no backlighting)
- **Improved call management**, thanks to:
    - A substantial personal directory (storage capacity for 200 numbers)
    - An outgoing call log (100 numbers stored on the terminal / from R5.2: 30 numbers stored on Aastra 5000)
    - An incoming call log (200 numbers stored on the terminal / from R5.2: 30 numbers stored on Aastra 5000)
    - Some navigation keys
    - 10 programmed function keys: call transfer, conference, call hold, redial, mute, 2 volume adjustment keys, hands-free system, options, on-hook and caller list
    - 9 programmable speed-dial keys on the terminal's digital keypad
- An **excellent audio quality** with, among others, a full duplex loudspeaker
- **Protection of customer investments**: firmware upgrades can be downloaded and installed once the protocols and standards change.
- **Advanced telephony function**: three-way conference through the conference bridge integrated into the terminal

- **User-friendly design with:**
    - LCD screen – 3 lines (no backlighting)
    - MWI LED
    - Ringer tone / ringer volume adjustment
    - Full duplex hands free/line seizure without lifting the handset
    - Mute key (without LED)
    - Time and date display (SNTP) – display of call duration
- **XML compatibility**: Aastra 6730i and 6731i have XML browser functions used to access some customised services and applications. Create some internal service applications using the development guides proposed by Aastra. This feature offers unlimited possibilities to customise the terminal according to specific needs or to install some vertical applications and CTI with the screen and keypad.
- Password management (login – logout)
- Wall mounting possible
- **Simplified management**:
    - Through different configuration modes: using the menu on the terminal, or remotely through a web interface, or even through TFTP
    - Network parameters are managed manually or dynamically. The following parameters can be provided by the DHCP server:
        - IP address
        - Subnet mask
        - Default gateway
        - VLAN ID
    - The following additional parameters may be provided by the TFTP server:
        - Call server IP address
        - VLAN ID
        - NTP server
        - DNS server
    - The TFTP server is also used to:
        - Update the terminal software
        - Configure the terminal through software loading
- The following **protocols and codecs** are supported by the terminal:
    - IETF SIP (RFC3261)
    - G.722
    - G.711 μ-law/A-law
    - G.729A
    - 802.1P/Q; Diffserv
    - 802.1x
    - LLDP-MED
    - VLAN ID via DHCP option (bail VLAN)
    - DHCP
    - SRTP and TLS
    - Packet loss compensation
    - Packet size adjustment
    - TFTP, FTP, HTTP, SNTP
    - Class 1 POE for **6731i**

Difference between Aastra 6730i and Aastra 6731i:

A6730i is not 802.3af compatible and is, therefore, systematically sold with the power pack basically included with the terminal.

A6730i does not have any 2-port Ethernet switch whereas A6731i has an 802.3af compatible Ethernet switch; the power pack is, thus, optional on 6731i.

A6730i and A6731i are smaller in size than A6750i – see diagram below:
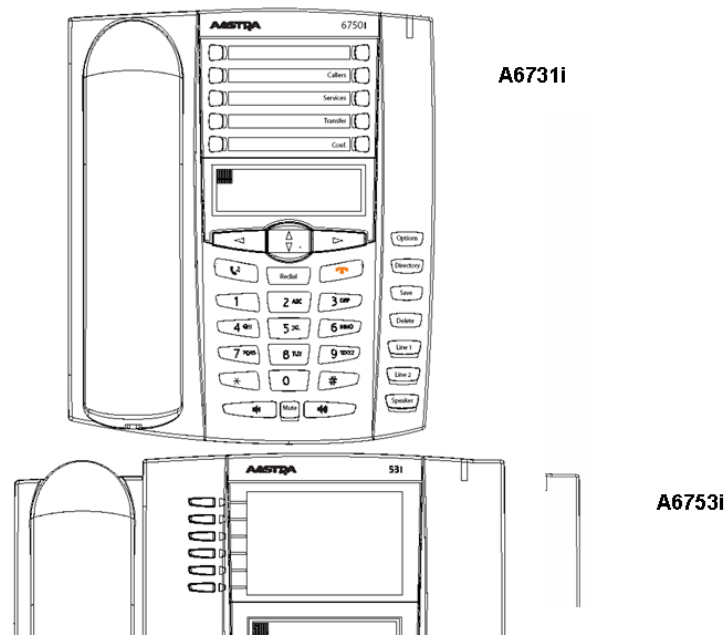
Main differences between Aastra 6731i and Aastra 6753i:

	Aastra 6731i	Aastra 6753i
Multi-line : max number of managed lines/calls	6	9
Multi-key : max number of available lines keys	2	3
Lines	6 2 dedicated keys	9 3 dedicated keys
Program keys	8 + 9 speed-dial keys on alphanumeric keypad	4
Ethernet ports	2	2
POE compatible	Yes Class 1	Yes Class 0
External power supply	optional	Yes
LCD display	3x16 single characters	3x16 single characters
Backlit screen	No	Yes
Full duplex hands free	Yes	Yes
Headset port	Headset mode supported**	Yes
Codecs	G.711 law A, law µ G.729A Broadband G.722***	G.711 law A, law µ G.729A Broadband G.722***
Directory (inputs)	200	200
List of calls (number)	100	100
Security TLS/SRTP	Yes	Yes
Browser	XML text	XML text
Extension module	No	Yes

* If client-server applications handling a huge number of packets per second are used (> 1000pps: CAD type application/specific database access), it is not advisable to connect the workstation to the 6731i PC port: use instead a direct connection from the workstation to the network switch or the PC port of a 675xi/6735i/6737i/6739i/53xxip type model.

** Supports headset instead of handset

*** from R2.5.2.1010, from R5.3 on Aastra 5000

35.5 Aastra 6753i

This set is designed as a multi-line IP telephone, offering a flexible and interoperable solution at an affordable price.

It has a two-port, 10/100 T base switch for connecting a PC and for remote power supply through the LAN (802.3af).

It is easy to use and has a backlit screen (as of terminal version HW 50) as well as a loudspeaker and headset socket (RJ-9).

It can be wall-mounted.

6 programmable keys with associated LEDs, virtual keys, multi-line facility, headset socket, LED on the mute switch, and a mains unit is included as standard.

Aastra 6753i terminal

Technical features and advantages of SIP terminal 6753i:

- A 3-line LCD screen
- 6 programmable fixed keys (*a new feature of terminal software version V2.1*)
- **Improved call management**, thanks to:A substantial personal directory (storage capacity for 200 numbers)
  - An outgoing call log (100 numbers stored on the terminal / from R5.2: 30 numbers stored on Aastra 5000)
  - An incoming call log (200 numbers stored on the terminal / from R5.2: 30 numbers stored on Aastra 5000)
  - Some navigation keys
  - A redial key, an on-hold key
- A **multi-line terminal** (3 visible lines – 9 in total) which supports up to 9 simultaneous calls, with indication of incoming calls on the LED. The user can switch conveniently from one call to the other at the touch of a button.
- **Alternate (Put calls on hold)**: keeping a caller on hold on one set and taking another on-going call
- An **excellent audio quality** with, among others, a full duplex loudspeaker

- Protection of customer investments: firmware upgrades can be downloaded and installed once the protocols and standards change.
- **Enhanced telephony functions** are available on terminal 6753i:
    - Call transfer
    - Three-way conference through the conference bridge integrated into the terminal
    - Enquiry call (a beep indicates when a second inbound call is not received). The second call arrives on a second line and is indicated by a flashing LED associated with this line.
    - SIP telephone functions provided by Aastra 5000
- **User-friendly design** with:
    - LCD screen - 3 lines (backlit as of version HW 50)
    - Hands-free
    - MWI LED
    - Ringer tone / ringer volume adjustment
    - Full duplex hands free/line seizure without lifting the handset
    - Mute key
    - Loudspeaker / headset switchover key
    - Redial key
    - On-hold key
    - Program keys
    - Headset socket
    - Release key
    - Time and date display (SNTP) – display of call duration
- Password management (login – logout)
- Fewer cables and connectors:
    - 2-port 10/100Mbits Ethernet switch: 1 for the PC, 1 for the LAN
    - Remote power supply through the network (802.3af)
- 10/100 Mbps Ethernet socket
- Wall mounting possible
- **Simplified management**:
    - Through different configuration modes: using the menu on the terminal, or remotely through a web interface, or even through TFTP
    - Network parameters are managed manually or dynamically. The following parameters can be provided by the DHCP server:
        - IP address
        - Subnet mask
        - Default gateway
        - VLAN ID
    - The following additional parameters may be provided by the TFTP server:
        - Call server IP address
        - VLAN ID
        - NTP server
        - DNS server
    - The TFTP server is also used to:
        - Update the terminal software
        - Configure the terminal through software loading

- The following **protocols and codecs** are supported by the terminal:
  - IETF SIP (RFC3261)
  - G.722
  - G.711 μ-law/A-law
  - G.729A
  - 802.1P/Q; Diffserv
  - 802.1x
  - LLDP-MED
  - VLAN ID via DHCP option (bail VLAN)
  - DHCP
  - SRTP and TLS
  - Packet loss compensation
  - Packet size adjustment
  - TFTP, FTP, HTTP, SNTP
  - Class 0 (<15.4W)

35.6 Aastra 6755i

This is an advanced and very user-friendly SIP terminal.

It has a two-port, 10/100 T base switch for connecting a PC and for remote power supply through the LAN (802.3 af).

It is user friendly, fitted, among others, with a large, 8-line LCD screen, a loudspeaker and a headset socket (RJ-9).

It can be wall-mounted.

Aastra 6755i terminal

Technical features and advantages of SIP terminal 6755i:

- An **8-line LCD screen** with 6 virtual keys that offer more information and flexibility for call management
- XML management
- **6 programmable fixed keys** reserved for system features on Aastra 5000
- **6 display keys which can be programmed** for 20 functions
- **Better call management**, thanks to:
  - A substantial personal directory (storage capacity for 200 numbers)
  - An outgoing call log (100 numbers stored on the terminal / from R5.2: 30 numbers stored on Aastra 5000)
  - An incoming call log (200 numbers stored on the terminal / from R5.2: 30 numbers stored on Aastra 5000)
  - Some navigation keys
  - A redial key, an on-hold key
- **A multi-line terminal** (4 visible lines – a total of 9 lines) which supports up to 9 simultaneous calls. The user can switch conveniently from one call to the other at the touch of a button.
- **Alternate (Put calls on hold)**: keeping a caller on hold and taking another on-going call
- An **excellent audio quality** partly due to a full duplex loudspeaker

- **Protection of customer investments**: firmware upgrades can be downloaded and installed once the protocols and standards change.
- Fewer cables and connectors:
    - 2-port 10/100Mbits Ethernet switch: 1 for the PC, 1 for the LAN
    - Remote power supply through the network (802.3af)
- Wall mounting possible
- **Enhanced telephony functions** are available on terminal 6755i:
    - Call transfer
    - Three-way conference through the conference bridge integrated into the terminal
    - Enquiry call (a beep indicates when a second inbound call is not received). The second call arrives on a second line and is indicated by a flashing LED associated with this line.
    - SIP telephone functions provided by Aastra 5000
- **User-friendly, ergonomic design**:
    - 8-line LCD screen
    - Hands-free
    - MWI LED
    - Ringer tone / ringer volume adjustment
    - Full duplex hands free/line seizure without lifting the handset
    - Mute key
    - Loudspeaker / headset switchover key
    - Redial key
    - On-hold key
    - Program keys
    - Headset socket
    - Release key
    - Time and date display (SNTP) – display of call duration
- Password management (login – logout)
- **Simplified management** using different configuration modes:
    - Through the terminal menu
    - Or remotely through the Internet
    - Or even through TFTP
- The following **protocols** are supported by the terminal:
    - IETF SIP (RFC3261)
    - G.722
    - G.711 μ-law/A-law
    - G.729A
    - 802.1P/Q; Diffserv
    - 802.1x
    - LLDP-MED
    - VLAN ID via DHCP option (bail VLAN)
    - DHCP
    - SRTP and TLS
    - Packet loss compensation
    - Packet size adjustment
    - TFTP, FTP, HTTP, SNTP
    - Class 0 (<15.4W)

35.7 Aastra 6757i

This is a top-of-the-range SIP terminal which offers the quality and technical features of the top-of-the-range SIP terminal from our previous range (480i), with many new features. Like other terminals of the range, it has a two-port, 10/100 base T switch ; one for connecting a PC and one for connection to the LAN, compatible with power over Ethernet (802.3af).

It is user friendly, fitted with a large, 11-line LCD screen, a loudspeaker and a headset jack (RJ-9).

It can be mounted on a wall.

Aastra 6757i terminal

Technical features and benefits of SIP terminal 6757i:

- An **11-line, back-lit LCD screen** with 6 sensitive keys that offer more information and flexibility for call management
- **XML** management: XML and XML client server
- **6 fixed programmable keys** for 10 functions reserved for system features on Aastra 5000
- **6 display keys which can be programmed** for 20 functions
- **Improved call management**:
    - A comprehensive personal directory (storage capacity for 200 numbers)
    - Outbound call log (storage capacity: 100 numbers stored inside the terminal / from R5.2: 30 numbers stored on the Aastra 5000)
    - Inbound call log (storage capacity: 200 numbers stored inside the terminal / from R5.2: 30 numbers stored on the Aastra 5000)
    - Navigation keys
    - A redial key, an on-hold key
- A **multi-line terminal** (4 visible lines – a total of 9 lines) which supports up to 9 simultaneous calls. The user can switch conveniently from one call to the other at the touch of a button.
- **Alternate (Put calls on hold)**: keeping a caller on hold and taking another on-going call
- An **excellent audio quality** partly due to a full duplex loudspeaker

- **Protection of customer investments**: firmware upgrades can be downloaded and installed once the protocols and standards change.
- Fewer cables and connectors:
    - 2-port 10/100Mbits Ethernet switch: 1 for the PC, 1 for the LAN
    - Remote power supply through the network (802.3af)
- Wall mounting possible
- **Enhanced telephony functions** are available on terminal 6757i:
    - Call transfer
    - Three-way conference through the conference bridge integrated into the terminal
    - Consultation call. The second call arrives on a second line and is indicated by a flashing LED associated with this line.
    - The SIP telephony functions provided by NeXspan
- **User-friendly, ergonomic design**:
    - 11-line LCD screen
    - Handsfree
    - MWI LED
    - Ringer tone/ringer volume adjustment
    - Full duplex hands- free/line seizure without lifting the handset
    - Mute key
    - Loudspeaker/headset switchover key
    - Redial key
    - On-hold key
    - Program keys
    - Headset socket
    - Release key
    - Time and date display (SNTP) – display of call duration
- Password management (login – logout)
- **Simplified management** using different configuration modes:
    - Through the terminal menu
    - Or remotely through the Internet, http page
    - Or even through TFTP
- The following **protocols are supported** by the terminal:
    - IETF SIP (RFC3261)
    - G.722
    - G.711 μ-law/A-law
    - G.729A
    - 802.1P/Q; Diffserv
    - 802.1x
    - LLDP-MED
    - VLAN ID via DHCP option (bail VLAN)
    - DHCP
    - SRTP and TLS
    - Packet loss compensation
    - Packet size adjustment
    - TFTP, FTP, HTTP, SNTP
    - Class 0 (<15.4W)

35.8 Aastra 6735i (Gigabit)

This is an advanced and very user-friendly **Gigabit** SIP terminal.

Terminal 6735i is an enhanced version of terminal 6755i. They have exactly the same characteristics in terms of design and ergonomics. The differences are:

- It has a **two-port, 10/100/1000 base T Gigabit switch**; one for connecting a PC and one for connection to the LAN, compatible with power over Ethernet (802.3af).
- It has **energy optimisation**. Therefore, beyond a key expansion module, it is necessary to have power supply via a mains unit.
- **Optimised hardware for HD audio quality** (handset and loudspeaker)
- Terminal 6735i is delivered without mains unit: it must be ordered separately.

It is user friendly, fitted with a large, 8-line LCD screen, a loudspeaker and a headset jack (RJ-9).

It can be mounted on a wall.

Aastra 6735i terminal

Technical features and benefits of the 6735i SIP terminal:

- An **8-line LCD screen with** 6 virtual keys that offer more information and flexibility for call management
- XML management
- **6 fixed programmable keys** reserved for system features on Aastra 5000
- **6 display keys which can be programmed** for 20 functions
- **Improved call management**:
    - A substantial personal directory (storage capacity for 200 numbers)
    - Outbound call log (storage capacity: 100 numbers stored inside the terminal / from R5.2: 30 numbers stored on the Aastra 5000)
    - Inbound call log (storage capacity: 200 numbers stored inside the terminal / from R5.2: 30 numbers stored on the Aastra 5000)
    - Navigation keys
    - A redial key, an on-hold key
- A **multi-line terminal** (4 visible lines – a total of 9 lines) which supports up to 9 simultaneous calls. The user can switch conveniently from one call to the other at the touch of a button.

- **Alternate (Put calls on hold)**: keeping a caller on hold and taking another on-going call
- An **excellent audio quality** partly thanks to a full duplex loudspeaker, **HD compatible hardware (handset and loudspeaker)**
- **Protection of customer investments**: firmware upgrades can be downloaded and installed once the protocols and standards change.
- Fewer cables and connectors:
  - **2-port 10/100/1000 Mbits Ethernet switch**: 1 for the PC, 1 for the LAN
  - Remote power supply through the network (802.3af)
- Wall mounting possible
- **Enhanced telephony functions** are available on terminal 6735i:
  - Call transfer
  - Three-way conference through the conference bridge integrated into the terminal
  - Consultation call. The second call arrives on a second line and is indicated by a flashing LED associated with this line.
  - The SIP telephony functions provided by Aastra 5000
- **User-friendly, ergonomic design**:
  - 8-line LCD screen
  - Handsfree
  - MWI LED
  - Ringer tone/ringer volume adjustment
  - Full duplex hands- free/line seizure without lifting the handset
  - Mute key
  - Loudspeaker/headset switchover key
  - Redial key
  - On-hold key
  - Program keys
  - Headset socket
  - Release key
  - Time and date display (SNTP) – display of call duration
- Password management (login – logout)
- **Simplified management** using different configuration modes:
  - Through the terminal menu
  - Or remotely through the Internet
  - Or even through TFTP
- The following **protocols** are supported by the terminal:
  - IETF SIP (RFC3261)
  - G.722
  - G.711 μ-law/A-law
  - G.729A
  - 802.1P/Q; Diffserv
  - 802.1x
  - LLDP-MED
  - VLAN ID via DHCP option (bail VLAN)
  - DHCP
  - SRTP and TLS
  - Packet loss compensation
  - Packet size adjustment
  - TFTP, FTP, HTTP, SNTP

35.9 Aastra 6737i (Gigabit)

This is a top-of-the-range **Gigabit** SIP terminal.

Terminal 6737i is an enhanced version of terminal 6757i. They have exactly the same characteristics in terms of design and ergonomics. The differences are:

- It has a **two-port, 10/100/1000 base T Gigabit switch**; one for connecting a PC and one for connection to the LAN, compatible with power over Ethernet (802.3af).
- It has **energy optimisation**. Therefore, beyond a key expansion module, it is necessary to have power supply via a mains unit.
- **Optimised hardware for HD audio quality** (handset and loudspeaker)
- Terminal 6737i is delivered without mains unit: it must be ordered separately.

It is user friendly, fitted with a large, 11-line LCD screen, a loudspeaker and a headset jack (RJ-9).

It can be mounted on a wall.

Aastra 6737i terminal

Technical features and benefits of SIP terminal 6737i:

- An **11-line, back-lit LCD screen** with 6 sensitive keys that offer more information and flexibility for call management
- **XML** management: XML and XML client server
- **6 fixed programmable keys** for 10 functions reserved for system features on Aastra 5000
- **6 display keys which can be programmed** for 20 functions
- **Improved call management**:
    - A comprehensive personal directory (storage capacity for 200 numbers)
    - Outbound call log (storage capacity: 100 numbers stored inside the terminal / from R5.2: 30 numbers stored on the Aastra 5000)
    - Inbound call log (storage capacity: 200 numbers stored inside the terminal / from R5.2: 30 numbers stored on the Aastra 5000)
    - Navigation keys
    - A redial key, an on-hold key

- A **multi-line terminal** (4 visible lines – a total of 9 lines) which supports up to 9 simultaneous calls. The user can switch conveniently from one call to the other at the touch of a button.
- **Alternate (Put calls on hold)**: keeping a caller on hold and taking another on-going call
- An **excellent audio quality** partly thanks to a full duplex loudspeaker, **HD compatible hardware (handset and loudspeaker)**
- **Protection of customer investments**: firmware upgrades can be downloaded and installed once the protocols and standards change.
- Fewer cables and connectors:
  - **2-port 10/100/1000 Mbits Ethernet switch**: 1 for the PC, 1 for the LAN
  - Remote power supply through the network (802.3af)
- Wall mounting possible
- **Enhanced telephony functions** are available on terminal 6737i:
  - Call transfer
  - Three-way conference through the conference bridge integrated into the terminal
  - Consultation call. The second call arrives on a second line and is indicated by a flashing LED associated with this line.
  - The SIP telephony functions provided by Aastra 5000
- **User-friendly, ergonomic design**:
  - 11-line LCD screen
  - Handsfree
  - MWI LED
  - Ringer tone/ringer volume adjustment
  - Full duplex hands- free/line seizure without lifting the handset
  - Mute key
  - Loudspeaker/headset switchover key
  - Redial key
  - On-hold key
  - Program keys
  - Headset socket
  - Release key
  - Time and date display (SNTP) – display of call duration
- Password management (login – logout)
- **Simplified management** using different configuration modes:
  - Through the terminal menu
  - Or remotely through the Internet, http page
  - Or even through TFTP
- The following **protocols are supported** by the terminal:
  - IETF SIP (RFC3261)
  - G.722
  - G.711 μ-law/A-law
  - G.729A
  - 802.1P/Q; Diffserv
  - 802.1x
  - LLDP-MED
  - VLAN ID via DHCP option (bail VLAN)
  - DHCP
  - SRTP and TLS
  - Packet loss compensation

- Packet size adjustment
- TFTP, FTP, HTTP, SNTP

35.10   Aastra 6739i (Gigabit)

Aastra 6739i is the latest release in the Aastra SIP terminal range. This top-of-the-range terminal integrates state-of-the-art communication technologies, with a modern and elegant design.

Aastra 6739i has a 5.7-inches, high-resolution, colour VGA touch screen and offers a very intuitive user interface and some functions easily accessible just by touching the screen. This terminal is equipped with a handset and a broadband, full-duplex loudspeaker, dedicated LEDs, a Bluetooth interface and a USB port.

Aastra 6739i also has headset sockets, which offer the automatic off-hook (DHSG) options; allows the management of more than 9 lines with caller display. Furthermore, it has two Gigabit Ethernet ports and some advanced call management functions.

It is wall-mountable like other terminals within its range.

Technical features and advantages of SIP terminal 6739i:

- A **backlit, 5.7-inches, full VGA (640x480) colour LCD touch screen** and a graphical interface with a very intuitive user menu
- **Better call management** thanks to a call management interface:
    - Forward, transfer, hold, duration
    - Caller and called party information
    - List of incoming, outgoing, missed calls, notification
    - A comprehensive personal directory (storage capacity for 200 numbers)
    - An outgoing call log (storage capacity for 100 numbers inside the terminal)
    - An incoming call log (storage capacity for 200 numbers inside the terminal)
    - The call directory of terminal 6739i can access a directory on the network hosting some pictures. So, if a caller is communicating with a user, the user not only sees the caller's number but also the associated picture. (image photo)
- **12 touch-sensitive keys which can be programmed** for 55 functions; 6 keys are reserved for system features on Aastra 5000

- Up to **9 lines** with caller status (icons/LEDs) in multi-proxy mode
- **Dedicated keys** for:
    - Voice prompts
    - Call transfer
    - 3-way conference
    - Directory
    - Call log
    - On-hook
    - LNR
    - Silence
- **Connectivity**: RJ jack, EHS/DHSG port, Bluetooth for headsets, USB port and keypad extension modules
- **Different ring tones** with alert priority
- Caller ID for incoming and outgoing calls
- Multilingual, downloadable language packs configured in the Aastra 5000 software
- **XML** interface and application development for better XML server and XML client productivity. In particular, terminals 6739i have access to the integrated XML server in the A5000 software. They, thus, benefit from such services as call by name, forward management, status notification in dual homing mode, as well as some deployment mechanisms.
- An **excellent audio quality** thanks to the Aastra Hi-Q Audio™ technology and a HD hardware design for better broadband audio (handset, hands-free system, and headset socket)
- **Protection of customer investments**: firmware upgrades can be downloaded and installed once the protocols and standards change.
- Fewer cables and connectors:
    - Gigabit Ethernet mode on 2 switches: 1 for the PC, 1 for the LAN
    - Remote power supply through the network (802.3af)
- Wall mounting possible
- Password management (login – logout)
- The following **protocols are supported** by the terminal:
    - IETF SIP (RFC3261) and the corresponding RFCs
    - Codecs: µ-law / A-law G.711, G.729A, broadband G.722,
    - Two 10/100/1000 Mbit/s Ethernet ports (LAN and PC ports)
    - PoE (Power Over Ethernet): IEEE 802.3af, class 0 (<15.4W)
    - Manual or dynamic DHCP for creating IP addresses
    - Management of multiple DHCP options: 66, 60, 43, 77, 159, 160
    - Date and time synchronisation through SNTP
    - Quality of Service (QOS) – IEEE 802.1 p/q VLAN and priority tagging, Type of Services (TOS) and Differentiated Services Code Point
    - NAT (Network Address Translation), STUN, TURN
    - Integrated HTTP/HTTPS server for web administration and maintenance, also for the diagnosis section
    - Mass deployment through central user configuration file provisioning – TFTP, FTP, HTTP, HTTPS
    - Redundant server
        - DNS-SRV
        - Local backup registrar and/or proxy server
    - RTCP (RFC1889) support
    - IEEE 802.1x
    - LLDP-MED
    - VLAN ID via DHCP option (bail VLAN)

- Packet loss compensation
- Packet size adjustment

Pictures display

From Aastra 5000 release R5.2, terminal 6739i displays callers' picture on the touch-sensitive LCD screen for the following events:

- Incoming calls
- Outgoing calls
- Incoming and outgoing call logs
- Directory

This function is available for internal and external numbers.

With **A5000 R5.2**, the pictures are stored on an external server or in Aastra 5000 via TFTP, FTP, HTTP and HTTPS.

The picture format is automatically adapted to the format required for display on the Aastra 6739i via the AMP or AM 7450 management servers. The authorised input formats are: JPEG, PNG, BITMAP, and GIF.

Pictures are either managed individually or massively by AM 7450.

Through AMP interface of the Aastra 5000 equipment, if the picture server is located on this Aastra 5000 equipment, individual or massive management is possible; otherwise only individual management is possible.

During directory synchronisation with an external directory such as Microsoft Active Directory or OpenLDAP, it is possible to update the user's picture (only with AM 7450).

This function is not configured by default on the terminal; the administrator must configure the terminal via TMA by indicating the protocol used (example: tftp://192.168.1.100).

Picture display is available in free seating mode if the terminals are using the same protocol. These latter must also be configured via TMA.

It is equally possible to display the caller ID for external numbers; the administrator must indicate an outgoing prefix for the number (example:

Picture display for a first call:

During a first incoming or outgoing call (or after a reboot), the terminal queries the server in order to associate a picture thanks to the called-party or caller number.

If a picture is associated with the number, the original blue logo is displayed for a specific period before the selected picture is displayed.

For the next incoming or outgoing calls, the picture is hidden in the terminal to optimize and to limit the network traffic (the cache can contain up to 200 pictures).

Modifying / deleting the pictures:

The administrator manages the modification or deletion of pictures via the server on which the pictures are saved.

Special case

No picture is displayed in the following cases:

- If the number in on the red list
- If the picture does not use the same protocol as the terminal declared via TMA
- If no picture is assigned to a terminal number
- During an enquiry call, the picture of the second caller does not appear. A panel is displayed on the upper part of the screen specifying the correspondent's name and phone number.
- During a conference.

The blue generic logo is displayed for all the foregoing events:

Touchscreen keypad:

- Add and delete some information on the phone
- Fill in the directory, personal information, configuration, application, navigation, etc.

35.11 Aastra M670i and M675i keypad extension modules

Thanks to the possibility to add keypad extension modules, the terminal can be extended with a number of programmable keys which vary according to model. This brings in much **flexibility**

- 2 keypad extension modules are offered: the Aastra M670i module and the Aastra M675i module

- Up to 3 modules can be used with a telephone.

Compatibility between 6700i terminals and keypad extension modules:

SIP terminals / Keypad extension modules	Aastra M670i	Aastra M675i
Aastra 6730i		
Aastra 6731i		
Aastra 6751i		
Aastra 6753i	Yes (from set firmware V2.1)	
Aastra 6755i	Yes (from set firmware V2.1)	Yes (from set firmware V2.1)
Aastra 6757i	Yes (from set firmware V2.1)	Yes (from set firmware V2.1)
Aastra 6739i*	Yes	Yes
Aastra 6735i**	Yes**	Yes**
Aastra 6737i**	Yes**	Yes**

*: addition of keypad extension module on Aastra 6739i requires the deployment of local power supply.

**: beyond one expansion block on Aastra terminals 6735i and 6737i, it is necessary to deploy the mains unit.

General characteristics

- The extension module is powered directly by the phone (except in the special cases described above).
- Using an extension module gives you an immediate view of programmed keys, regardless of whether the terminal is idle or busy.
- Programmable functions may be: supervision, multi-key, multi-line, filtering, line seizure, dialling, do not disturb, parking, recovery, etc.
- Each terminal can support up to three keypad extension modules

Features of the Aastra M670i keypad extension module

- 36 keys with the associated LEDs
- Compatible with the Aastra 6753i (from terminal software version V2.1), 6755i, 6757i and 6739i.

Aastra M670i extension module

Features of the Aastra M675i keypad extension module

- 60 keys with the associated LEDs: 3 pages of 20 keys each are accessible through the 3 keys located under the keypad extension module screen.
- LCD screen with customisable labels
- Compatible with the Aastra 6755i (from terminal software version V2.1), 6757i and 6739i.
- Possibility to automatically switch the screen focus to an expansion module or softkey page that has BLF activity (from software version 3.1)

Aastra M675i extension module

35.12 DHSG compatibility of the terminals

The DHSG protocol is used to manage remote go off hook and go on hook, from the headset. Aastra terminals **6753i**, **6755i**, **6757i**, **6735i**, **6737i** and **6739i** are DHSG compatible (as of release R2.5.0).

The terminal automatically detects the DHSG headset connected.

The compatible headsets are GN Netcom headsets. For more information, please refer to chapter "Managing headsets on Aastra Terminals"

Restriction: when a headphone is connected in DHSG mode, no keypad extension module can be associated to the terminal.

35.13 G.722 support on Aastra 6700i

The table below compares the performances of the codecs supported by Aastra 6700i series terminals and shows, among other things, that with the same bandwidth G.722 offers a better audio quality (HD) than G.711 (SD):

Audio format	Sampling frequency	Bit rate	Restored frequency	Quality	Support
G.729	8 kHz	8kb/s	300-3400Hz	SD	Aastra 6700i, BluStar 8000i, ACP, UCP
G.711	8 kHz	64kb/s	300-3400Hz	SD	Aastra, 6700i, BluStar 8000i, ACP, UCP
(Broadband) G.722	**16 kHz**	**64kb/s**	**7kHz**	**HD**	**6700i, BluStar 8000i**

35.14 Comparison of the features of Aastra 6700i

For more information please refer to Chapter 10 "Table of Compatibility and Extension Levels" - "Phones" tab.

35.15 Telephony features of Aastra terminals 6700i

This section describes the main features of the terminal 6700i Aastra 5000 Call Server.

A comparative table of the telephony features of the Aastra range and the technical features of the SIP terminals offered by Aastra can be found in the *R5.4 Product Guide: Chapter 10: "Table of Compatibility and Capacities of Aastra 5000 - Aastra Applications" Tab: "R5.4 features"*.

35.15.1 Features supported / not supported in A5000 R5.4

Features supported in R5.4*

- Enquiry call, alternate, resume, put call on hold
- Call forwarding (via code or via the A5000 software XML server)
- Three-way conference
- Intercom / supervision (BLF)
- Manager / assistant filtering in the N managers, N assistants configuration; managers and assistants can have a SIP terminal
- Password management (login – logout via XML server)
- Language management (via XML server)
- Free seating (via XML server) available for mono and multi-line
- Call logs stored on the A5000 call server (via XML server)
- Indication of Dual homing
- DTMF code transmission
- Voice Mail: MWI
- Monitored or blind programmed transfer via feature codes
- Call pick-up
- Hunt groups
- Multi-line
- Multi-key
- SRTP encryption of voice calls and TLS signals
- CTI supervision: TAPI/CSTA/VTI/XML
- Call by name on A5000 directory (via XML server)
- Dynamic update of caller/called party name in complex call
- Indicating a waiting call
- Parking and call pickup (R5.4 SP1)
- Automatic callback (R5.4 SP1)
- Malicious call (R5.4 SP1)
- Announcements and voice guide (R5.4SP1)

*some functions require a software key code to be entered in the A5000 software:

Programmable keys configuration

Some features may be configured on the programmable keys by the administrator on the AM 7450 or by the user interface from the APS (Aastra Phone Suite):

- Dialling key (from R5.2)
- BLF supervision key (from R5.2)
- Forwarding without number, (from R5.3 SP1)
- Appointment reminder, (from R5.3 SP1)
- DND (do not disturb), (from R5.3 SP1)
- Terminal locking (enhancement of the locking mechanism) (from R5.3 SP1)
- Multi-line function (R5.4) (except 6751i):
    - Multi-key on the main directory number configurable via APS or AM 7450

- Multi-key on secondary directory numbers configurable via AM 7450 only

Some more specific functions can be configured on programmable keys via AM 7450:

- General standby (from R5.3 SP1)
- Filtering, (from R5.3 SP1)
- Hunt group activation (from R5.3 SP1)
- Message indicator light, (from R5.3 SP1)

Note:

- In case of Dual Homing, these keys are retained.
- In case of free seating, these keys are retained only if an AM 7450 is installed.
- In this version, URL XML function keys are not managed in Aastra 5000/AM7450. They must still be managed via the integrated terminal management web interface.
- However, as there is no synchronisation between the integrated web management of the terminal and Aastra 5000 / AM 7450 management, it is advisable to limit the use of integrated web administration to administrators only.

Features not supported in R5.4:

- Intrusion, discrete listening
- Call diversion
- Call by name via TWP Browser or display of name from TWP Browser
- Call when receiver is off hook, the function is in the set and may be programmed locally
- Automatic dial closure
- Tone after dialling 0

35.15.2 Some facilities in detail

35.15.2.1 Menus via Aastra 5000 XML interface

As of release R5.2 some features are accessible from the **"menu" key** of the terminal, thus increasing ergonomics and ease of use of Aastra 6700i (not available on 6751i).

```
== Menu ==
▶Call lists
  Activated features
  Forwarding
  Settings
Back
Exit
                Select
```

```
== Menu ==
▶Voice mail
 *Language
  Logout

Back
Exit
                Select
```
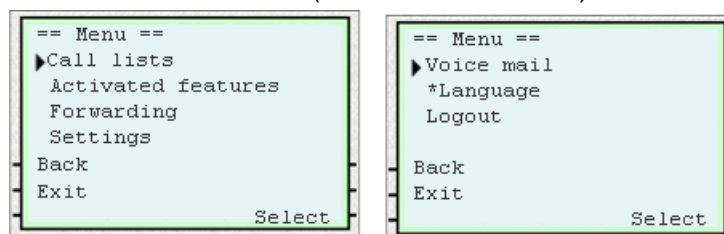
This key gives access to the following functions:

- **Access to call logs** (incoming/outgoing/all calls): this is the iPbx call log which is accessible instead of the terminal call log (except for A6739i).
- **Forward programming:**
    - all forwarding types
    - for any flow type or internal / external calls
    - to internal or external numbers, voicemail
    - notification of forwarding activated.

Indication of forwarding on the idle screen + LED

```
== Forwarding ==          == Origin ==               == Destination ==
▶Immediate forward        ▶All origin                ▶✓To subscriber
 Forward if busy           Internal origin             To voicemail
 Forward on no reply       External origin             To pager

Select                    Select                      Select
              Done                      Done          Delete
                                                                   Done
```

```
L1              S.Mary(4218)
       ┌─────────────────────┐
       ┊ Phone is forwarded  ┊
       └─────────────────────┘
         Tue Oct 10 9:18am

 ■    Menu
```
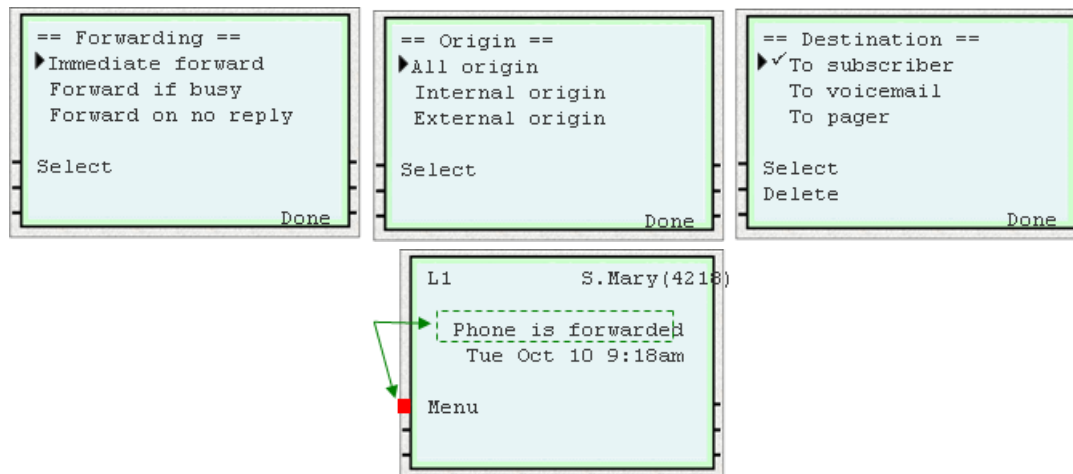
- **Activate/deactivate Do Not Disturb**
- **Password and language management**. The terminal language is synchronised.
- **Activate/deactivate Alarm**
- **Activate / deactivate hunt group**
- **Call voicemail**
- **Lock / unlock terminal**
- **Login / Logout**
- **Indication of active dual homing**

Notes:
- Available for the main line only
- The menu key is a system key programmed via the iPbx.
- No call-based terminal unlocking

35.15.2.2 Dialling

No **tones** after 0 (outside line prefix).
Automatic dial closing is not activated on SIP terminals: an open number must be sent via the "Dial" key.
Automatic call on off-hook cannot be programmed for an SIP terminal.

35.15.2.3 Call by name – internal / external directory access

Aastra 6700i terminals access the Aastra 5000 directory through the XML server embedded on the A5000 software:
- On terminals A6753i, a directory record is searched on internal and external records. Therefore, external records are accessible without choice on the part of the user.
- Terminals A6755i and A6757i propose that it be searched on internal or external records (the user has the choice).

35.15.2.4 During a call

Transfer and conference: these functions are available but are managed by SIP terminals (NeXspan / Aastra 5000 conference circuits are not used).

Call on hold

A call on hold is indicated by the call waiting indication function, when an incoming call is presented to a busy terminal (new R5.4).

Parking and pick up a call (6700i XML) - R5.4 SP1

A call can be parked or put on hold during an ongoing call via the A6700i **menu** (not available on 6751i). A call is resumed on:

- A SIP terminal of the association, simply by lifting the handset or via the green button (on 6739i)
- On another SIP terminal, via the menu or via a feature code.

This function is useful especially for fixed/mobile convergence.

Note: if the external call on hold is not picked up within a given time, it is routed to the operator.

An internal call will be released.

For associated terminals, this function can also be used to send the call to another terminal of the association.

Parking and call pickup – during an ongoing call

During an ongoing call
Press Menu then press Park
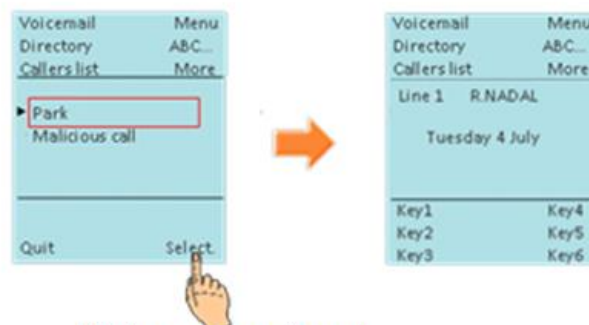
Display of the pickup call status on the SIP terminal on which the action has been made

When retrieving the parked call from a SIP terminal
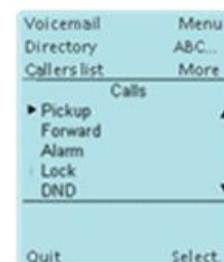
Automatic callback (6700i XML) - R5.4 SP1

Automatic callback is available if the subscriber is busy, does not answer, or if a trunk group is busy.

It is programmed via the terminal **menu** (no Flash key).

The status of automatic callback request is available on the active function display.

Automatic callback – during an ongoing call
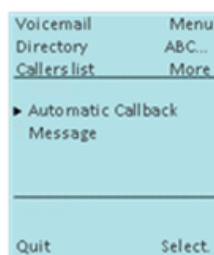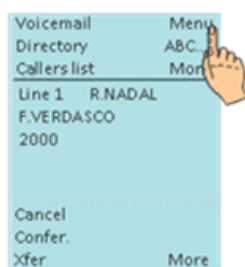
During an ongoing call press Automatic Callback

During an ongoing call press Menu
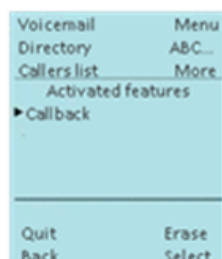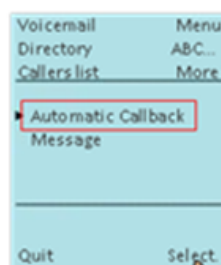
Display during the automatic callback

Display of the automatic callback status

Malicious call (6700i XML) - R5.4 SP1

During a call, the terminal **menu** proposes to trace a malicious call (not available on 6751i).

Malicious call – during an ongoing call

During an ongoing call
Press Menu and validate your request
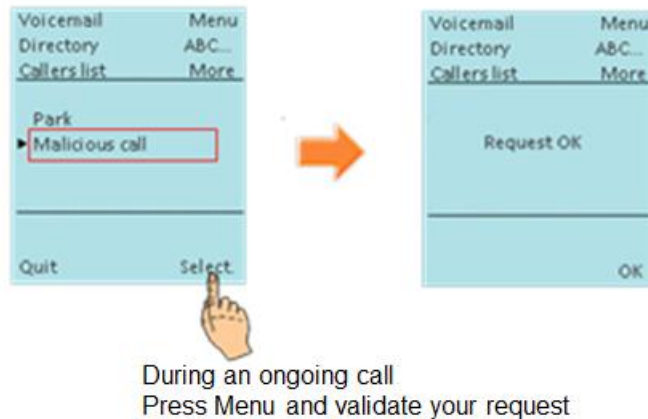
The **intrusion** function cannot be activated from an SIP terminal.

35.15.2.5 Forwarding - Divert - Do Not Disturb (DND)

Forwarding:

From release **R5.2** the user of a terminal 6700i can configure his **forwarding** via the A5000 XML server. He enjoys better configuration ergonomics and a notification on the terminal concerning the forwarding status (activated or not activated).

From release **R5.2 SP2**, it is possible to program a forward key via AM7450 ("Key" menu of the subscription concerned) or via APS.

From **R5.3 SP1**, forwarding without number can be programmed on keys via AM7450 or APS.

The following forward keys can be programmed:

- Immediate forward,
- Forward on busy
- Forward on no answer,
- Cancel of all forwards
- Predefined forward (not available via APS)

Activation or deactivation of the forward is done by pressing the corresponding key (except when the subscription is on communication on the concerned phone or on an associated phone).

LED is on when the forward is active and is off when the forward is inactive.

LED of « cancel of forward s » key is never on.

Forwards can also be activated on an SIP terminal using the associated codes/prefixes of the iPbx, but without notification of their status (activated or not).

In **R5.4**, it is possible to program a forwarding operation on each line of the multi-line configuration.

Do Not Disturb (DND):

From version **R5.2** and on a terminal 6700i, it is possible to activate and be notified via the A5000 XML server about the **Do not disturb** function.

From release **R5.3**, DND can be programmed on keys via AM 7450 or APS.

DND can be activated using a code, but this is not recommended.

General standby (depending on the programming performed by the system operator)

When a user wishes to step out whereas his colleagues have activated call forwarding or filtering to his terminal, this function allows these calls to be temporarily forwarded to the called parties so callers are not penalised. If the user is part of a call group, his phone will be excluded.

Call divert:

The **call divert** function is not available on SIP terminals.

35.15.2.6 Managing multiple calls

Multi-key function – From R5.4

From R5.4, the multi-key function (or multi-CCO or multi-call function) is available on SIP terminals.

A terminal set to multi-key mode can have only one directory number, but has personalised keys to enable it process several calls at the same time. Therefore, the user can take calls as they arrive and see the calls on hold.

The number of personalised keys must be the same as the number of calls the user wishes to have at the same time. For example, for three simultaneous calls, the multi-key function will be programmed on three keys.

Note: this function is programmed by the system operator.

Using an expansion module gives you an immediate view of programmed keys, regardless of whether the terminal is idle or busy.

Note: this function is not compatible with **free seating.**

This function requires only **one IP Audio licence** on the Aastra 5000 side.

Multi-line function

With R5.4, the multi-line function is available on SIP terminals with only one IP audio or generic licence.

A multi-line terminal has several directory numbers (for instance, a "corporate" number and a "private" number). Each directory number is stored on a programmable key.

Note: this function is programmed by the system operator.

Using an expansion module gives you an immediate view of programmed keys, regardless of whether the terminal is idle or busy.

When a terminal is set to multi-line mode, the user can assign each of his directory numbers the features he wishes to use.

Example of how to select a multi-line function:

```
        Main menu                      Forwards on line

   Activated features          ▶  All lines
 ▶ Forwarding                      Main line (3016)
   Settings              ▼      ✓ Line (3116)
   Voice mail                     Line (3216)          ▼

                  Line           Exit
   Exit          Select          Back           Select
```
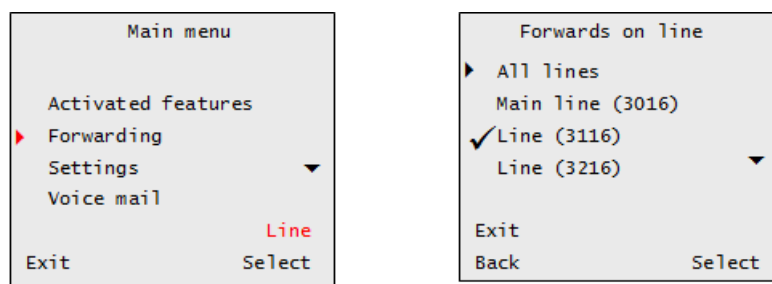
Each directory number can also be set to multi-key mode (managing double calls).

The user has a voicemail box associated with each directory number. Forwarding is programmed independently and with sometimes different secret access codes.

Note:

- The SIP terminal can now be associated with a real multi-line subscription, and the specific configurations available in releases earlier than R5.4 are no longer supported: the deployment login is not used any longer.
- SIP terminals can now be used as assistant terminal(s) in an N managers, M assistants configuration, and as a telephony terminal for ACP Web Attendant.
- If no CCO is programmed in the subscription, the terminal acts as if it has two programmed CCOs.
- To manage more calls (for specific applications) some CCOs must be programmed in the subscription. However, no specific programming is required if the number of CCOs is less than the number of keys. Programming is automatic in case of management via AM 7450.

Restriction

- The number of managed calls depends on the SIP terminal capacities: see table below.
- For terminals 6730i and 6731i, the maximum number of authorised lines is the number of lines available, that is 2.

Terminal	6730i	6731i	6739i	6751i*	6753i	6735i 6755i	6737i 6757i
Maximum number of lines/calls managed	6	6	9	1	9	9	9
Maximum number of line keys available	2	2	3	0	3	4	4

* only one key managed by 6751i – the terminal is not a multi-line terminal.

35.15.2.7 Hunt groups

SIP terminals may be included in some hunt groups. From release R5.1C+, they can be in general call hunt groups (max 16 SIP terminals) and in hunt groups with the longest idle time.

A SIP terminal can be included in several hunt groups:
- First hunt group: any type
- Other hunt groups: general call
- Uses one line (one number) per hunt group
- max. 16 SIP terminals per general call hunt group
- SIP terminals may belong to groups whose distributions are as follows: general call hunt, cyclic hunt group, fixed head hunt group, longest idle time hunt group.

See Chapter 10 for the sizing of these different groups and the limits of the number of terminals in these groups.

35.15.2.8 Call logs

With **A5000 R5.2**, terminals 6700i have better ergonomics, similar to that of a GSM, with a call log which is no longer internal.
- The call logs of terminals A6730/31i, A6753i, A6755i, A6757i (as well as those of terminals A5300ip and A5300) are **stored on A5000**.
- The incoming call log contains up to **30 numbers** (unduplicated).
- The incoming-call and callback log contains up to the **last 30 numbers** (unduplicated).
- All calls are logged (transferred calls, calls on hold, etc.).
- From version **A5000 R5.4**, the call log contains the activity of all the lines of a multi-line A6700i terminal.

Call logs on 6739i
- The call logs of terminal A6751i are stored on the terminal itself. The call logs of the new terminal A6739i are inside the terminal and can be enhanced with regard to Aastra 5000 logs, for example, through correspondents' pictures.

Example of caller display on the A6739i screen:
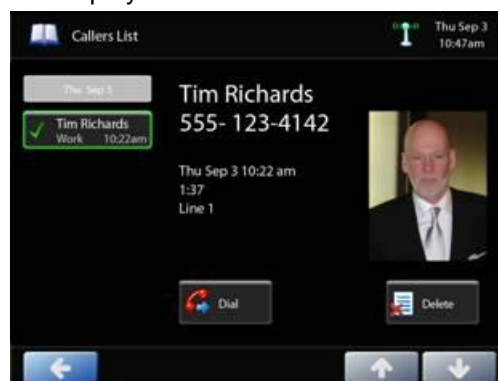
- The call log cannot be accessed by Aastra Phone Suite or the other terminals.
- If the terminal has several subscriptions, only the calls coming in on the main line are logged.
- The call log is not copied during dual homing.
- The call log is lost if the subscriber moves to another site or in case of free seating.

The advantage for the user is that these terminals have a better ergonomics, comparable to that of his GSM. Moreover, these terminals are compatible with mobility (free seating).

35.15.2.9 Computer Telephony Integration

SIP terminals are supervised by TAPI, CSTA and VTI / XML. This allows the coupling of a SIP terminal with the Dialer, Aastra i2052, TWP or third-party CTI applications.

With A5000 R5.4, tones are managed for CTI calls: therefore, a 6700i series SIP phone can be used as a terminal associated with ACP Web Attendant.

For outgoing calls:

- From R5.1C, a call may be started from the application, the SIP terminal **changes automatically to hands-free mode**.
- Remarks:
  - Tones on CTI calls: when a call is made from a CTI application, the ringback or busy tone is sent to the SIP terminal.
  - The called number is not saved in the SIP terminal's "redial key" memory.

For incoming calls:

- It is possible to off-hook in hands-free mode from the application (R5.2 minimum). **The user does not need to off-hook the handset of SIP terminal to answer the call.**

Ringing status in TWP:
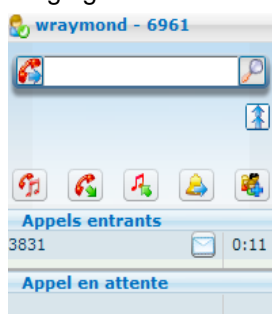
Call in progress status
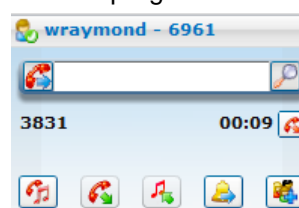
This feature is available on CTI applications XML/VTI, CSTA and TAPI, especially **TWP**.

Note:

- A specific configuration of the terminals is necessary if a headset is used.

35.15.2.10   Supervision / intercom

From **A5000 R5.2**, some supervision / intercom keys on SIP terminals, especially 6700i, are programmable. Terminals 6700i can still be supervised by other proprietary IP or TDM terminals.

The **supervision function** (Busy Lamp field) is used to know the status of another terminal. Each person belonging to the same intercom group can configure a supervision key (with indication) in order to:

- Call the supervised terminal simply by pressing a key.
- Know whether the supervised terminal is free or busy
- View the status of an incoming call on this supervised terminal and intercept it just by pressing a key.
- Forwarding an incoming call to the supervised terminal

The different **supervision modes** become available with this function:

- Simple intercom
- Reduced intercom
- Manager / assistant filters: N managers, M assistants configuration – from R5.4

From terminal software version 3.3 it is possible to automatically switch the screen focus to an expansion module or softkey page that has BLF activity. This feature is available on 6755i, 6757i, 6739i as well as on M675i expansion module and can be activated via configuration file.

Intercom group:

- Simple or restricted
- Program keys:
    - Call supervision: status via LEDs
    - Call pick-up
- Filtering: filtering enables a "filtered" terminal to forward calls to a "filtering" terminal while monitoring the forwarded calls. It requires the use of two programmable keys on the filtering terminal and two programmable keys on the filtered terminal: one key for activating or deactivating the filter, another key for monitoring calls. With A5000 R5.4, the A6700i series terminals (except A6751i) can be both filtered and filtering terminals and can be used in an N managers / M assistant's configuration.

Intercom configuration:

Each user defines on his terminal the terminal of the same group he wishes to supervise. He assigns a key to each supervised terminal. This key offers the following functions:

- Terminal idle: terminal not active. The supervised terminal is called by pressing the key.
- Flashing indicator light: a call is arriving on the terminal in question. A beep may be associated with the indicator to show that a call has arrived. This is not a personal but general beep. The user can intercept the call.
- Indicator active: the supervised terminal is engaged in a call.

A terminal may belong to 2 separate intercom groups.

The user can configure an intercom key via the Aastra Phone Suite interface.

A configuration is required on the Aastra 5000 software and on the SIP terminal if this is done by the administrator or if the installation does not have the APS module on AM 7450.
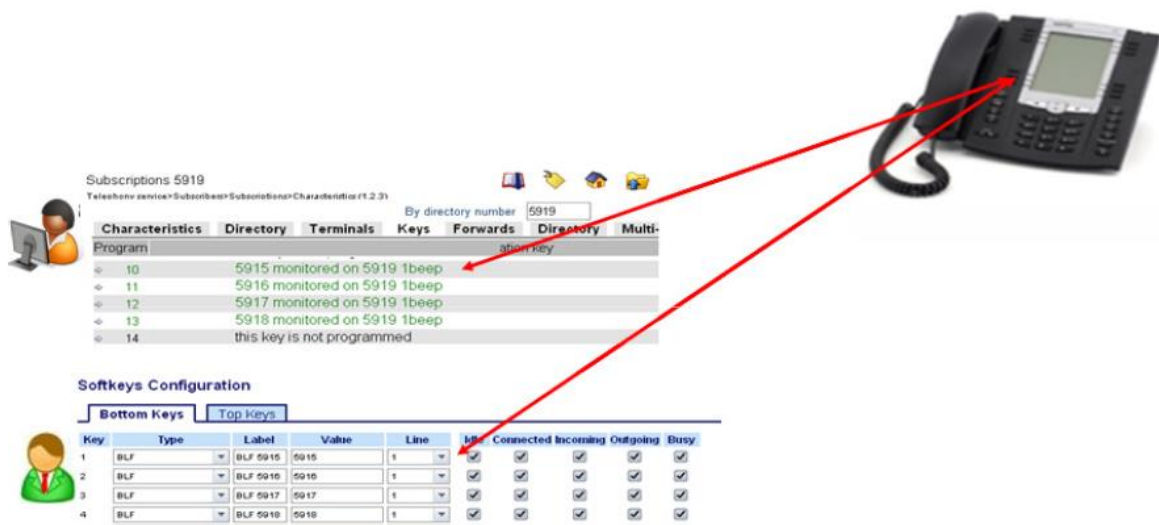
In a **multi-site Aastra 5000/ NeXspan configuration with heterogeneous releases** (R5.4, R5.3, R5.2,), an Aastra 6700i connected to an Aastra 5000 R5.3 can supervise any type of terminal connected to the same or earlier iPbx releases. It is necessary for the supervised terminals to belong to the same intercom group.

An SIP terminal connected to a platform of software release earlier than R5.2 is not be able to supervise any terminal.

Ergonomics:

In terms of ergonomics on Aastra terminals 6700i, audio signals are the same on all the terminals; it is all about a general parameter of the A5000 server.

If a user is engaged in a conversation, he cannot intercept a call arriving on another terminal by pressing the supervision key.

A terminal's virtual supervision key disappears when a call arrives on an Aastra 6757 or 6755i. Some keypad extension modules are recommended for these terminals.

Intercom function capacity:

An Aastra 6700i can supervise a maximum of 50 remote terminals (depending on the number of programmable keys).

The BLF supervision function on AX Series is limited to 2000 keys whereas on an Aastra 5000 Server it is limited to 30,000 keys.

Remarks:

The following A5000 intercom features are not available on SIP terminals 6700i:

- Privileged intercom
- Filtering key configuration
- Trunk line intercom

35.15.2.11   Assistant / manager filtering

From **A5000 R5.4**, the N managers / M assistants filtering function is available with A6700i series terminals (except 6751i) both for managers (as of R5.3) and assistants (new R5.4). It is then possible to have the following types of manager / assistant configurations:

- M managers, 1 assistant
- 1 manager, N assistants
- M manager, N assistants

Note: if the manager has an A6700i series terminal, his assistant may have the following terminal types: A6700i (new R5.4), A5300ip, i7xx, A5300, M7xx.

Configuring the manager filtering key:

On the terminal manager, the following keys are set for each assistant (e):
- an activation/deactivation key which indicates the current status of the filtering
- a restricted intercom key with the number of the assistant which provides him to:
  - call his assistant
  - know the free / busy status of his assistant
  - intercept his incoming calls when his own assistant does not

Manager set programmation
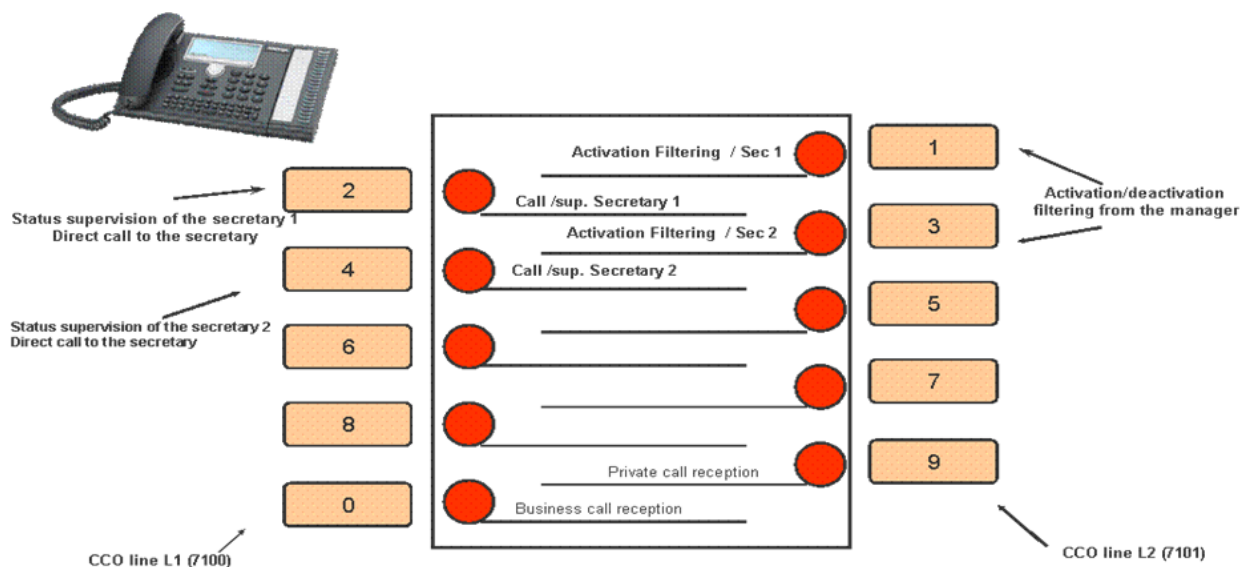
Programming assistant keys

The following keys have to be configured on the terminal for each manager:

- Activation/deactivation key
- A reduced intercom key, with the manager's number, which enables her to:
  - Call her manager
  - Know his status
  - Answer the manager's call when filtering is not enabled, and if he fails to answer.

On the terminal, the assistant sees whether the call is meant for her manager(s) or for herself.

The manager and assistant must have the appropriate individual rights:

- Manager: immediate forwarding allowed
- Assistant: assistant forwarding allowed.

35.15.3 Login/logout – free seating

This function reinforces the mobility of terminals A6700i.

Therefore, from **R5.2**, free seating becomes available on A6700i in addition to A6750, A5300, A5300ip and i/M7xx.

It enables the subscriber to log on to any type of terminal (A6700i, M7xx, i7xx, A5300 and A5300ip) without restarting his terminal and losing his subscription.

Note:

- **From A5000 R5.4**, free-seating is available with multi-line subscriptions.
- It is not available on A6751i.

Description :

- Free-seating enables a subscriber to change from one terminal type to the other and to find his profile on another terminal in the multi-site configuration.
- The features managed on the iPbx are available after a login/logout:
  - Voice mail notification
  - The call log managed by the iPbx (except for A6739i the call log of which is stored on the terminal)
  - Information about missed calls
  - Programmed forwarding
  - Subscription language and rights
  - The system keys managed by the iPbx. These do not include the keys programmable by the user or administrator, which are the same for all the users.
  - iPbx directory access
  - Programmed keys of the subscription (Intercom, facilities and CCOs) if an AM 7450 is installed

Some engineering rules:

The subscriber must have the right to log out.

User authentication principle:

- The user must authenticate himself during login. He has the right to 3 login input attempts. If the attempts fail, the authentication service becomes unavailable for 5 minutes.
- The subscription number is sent in http, while the user password is sent between the terminal and the A5000 call server in https.
- For a multi-line configuration: the login function is used with the main number of the subscription. All the lines are automatically logged on to the same terminal.

The user login is accepted on the following conditions:

- The subscription does not have the right to log out and:
    - The subscription is not assigned.
    - Or: the subscription is assigned to a SIP or IP DECT terminal, and no set is connected.
    - Or: the subscription is already logged on to this terminal.
- The subscription has the right to log out and:
- The subscription is not assigned.
- Or: the subscription is assigned with any type of terminal.
- Or: the subscription is assigned with a terminal (and this terminal cant be relocated). In this case, after login, the status of this terminal changes to anonymous terminal.

User login (user/terminal allocation) is rejected on the following conditions:

- Subscription does not have the right to log on.
    - Subscription is already registered with another terminal.
    - Another terminal type is already registered (except SIP or IP DECT).
- No IP licence or Aastra SIP terminal is available.
- Not-loggable subscription on a terminal that cannot be moved with this subscription (analogue, SIP video terminal).
- User subscription cannot use this service: attendant console, messaging subscription
- Subscription communicating
- Subscription out of service

Login/logout is available on terminals A6700i (except on terminal 6751i) from the menu provided by the A5000 XML server.

Logout is rejected in the following situations:

- Terminal is active in a terminal hunt group.
- Terminal is a reduced night service terminal.

Subscribers using these services can also use the following services:

- Computer telephony integration – association with the mobile user's PC
- This user's subscription on several simultaneous physical terminals (mobile terminals for instance).

The rules for login/logout with an association are identical to those for a subscription authenticating to a single terminal.

From **Aastra 5000 R5.4:**

- The deployment login is not available any longer.
- The login with password is available: a specific password is managed by the user for each subscription during its creation. Security is reinforced.
- Free seating is available and it is necessary to have an AM 7450 R2.4 so as to be able to retain the subscription-related programmable keys and multi-line configuration, during relocation.

35.15.4 Security: dual homing and login/logout (free seating)

Terminals in anonymous mode do not have the so-called dual homing backup configuration.

A backup subscription behaves like a subscription without logout authorisation possibility.
Logout is rejected in the dual homing phase.
Login is accepted if the subscription on which the user is trying to log on:

- has no assignment
- Or has a SIP or IP DECT assignment, with not set connected on
- Or has the same terminal already registered (after factory reset)

After his login, the user retrieves the following features:

- Call forward settings
- The user's subscription and language rights
- The system keys (directory, mailbox access, etc.) managed by the A5000 call server
- Access to the A5000 directory for call by name.

The terminal's programmed keys and private directory are not available in the relocation.

If a subscription is not associated with a terminal, the missed call indicator is updated, as well as call forwarding on busy.

35.16 Compatibility

Aastra system compatibilities:

Following table illustrates the compatibility of 6700i phone's model and firmware version depending on Aastra 5000 software version:

A5000 version\Model	6753/6755i/6757i	6730i/6731i	6739i	6735i/6737i
R50.1A	V2.1.2.2005			
R50.1A-ph II	V2.1.2.2005			
R5.1B	V2.3.2.5			
R5.1B-ph II	V2.5			
R5.1C	V2.5.1.2000	V2.5.1.2000		
R5.2AB	V2.6.0.66	V2.6.0.66	V3.0.1.2010	
R5.2SP1	V2.6.0.1007	V2.6.0.1007	V3.0.1.2029	
R5.2SP2	V3.2.1.1018	V3.2.1.1018	V3.2.1.1018	
R5.3	V3.2.2.56	V3.2.2.56	V3.2.2.56	
R5.3 SP1	V3.2.2.56	V3.2.2.56	V3.2.2.56	V3.2.2.XX
R5.4	V3.2.2.2077	V3.2.2.2077	V3.2.2.2077	V3.2.2.6246
R5.4SP1	V3.2.2 SP3	V3.2.2 SP3	V3.2.2 SP3	V3.2.2 SP3
R5.4SP2	V3.3.1	V3.3.1	V3.3.1	V3.3.1

Notes on the integration of terminals 6700i: these terminals can be installed on many telephony platforms offering SIP (Sylantro, Broadsoft and Asterisk).

Caution: The compatibility of Aastra SIP terminals with other telephony platforms cannot be guaranteed by Aastra and must be checked by our partners.

35.17 Deploying 6700i series terminal

There are two methods of deploying 6700i series terminals, recommended by Aastra:

- **Deployment through manual login**:
    - With TMA not configured
    - Or with TMA configured (CTRL-I)
- **Massive deployment**

Other deployment methods are available but are not recommended by Aastra.

See the sections below for more information about these different methods.

35.17.1 Automatic deployment through manual login

This deployment method is used when the administrator does not wish to enter the subscriber number in each terminal. Manual login is then used.

This deployment method consists in logging on manually to A6700i series terminals without having to enter the specific configuration file @MAC.cfg. The production software release and global data configuration files downloaded by the A6700i series terminals during this deployment phase are available in the storage directory deployment_67xxi. This directory is accessible to A6700i series terminals via the connexio/connexio account, which is the default account of the A6700i series terminal upon leaving the factory.

- The administrator configures the DHCP server in order to communicate the FTP server IP address to the terminal.
- Via an Excel file imported by TMA, the administrator enters the **general** configuration **parameters** and the terminal's latest software release. It is also possible to choose the FTP server used. The general configuration parameters differ from one FTP server to the other.
- The terminal can then be connected to the working network.
    - The terminal is initialised and connects to the integrated DHCP server. The integrated DHCP server then assigns the terminal an IP address. The integrated DHCP server also provides the A6700i series terminal with the IP address of the integrated FTP server and the (connexio/connexio) account to which the A6700i series terminal will connect to download its production software release and deployment global data configuration file.
    - After the new production software release and global data configuration file are downloaded, the terminal screen indicates that the terminal is a general-purpose terminal (without a subscriber).
    - The manual login procedure may start after pressing the **Ident** key, which lights up by default. The user must then enter the subscription number of the 6700i series terminal and confirm (by pressing **Enter**) then the password (**0000** by default) and confirm (by pressing **Enter** or **OK**). A hold message appears and the terminal automatically logs on to its subscription.
    - The terminal is working; the idle screen is displayed.

Note: when the user enters his subscriber number, Aastra 5000 checks whether the subscription exists in the LDAP directory. If the subscriber number does not exist, the user is again prompted to enter his subscriber number.

Automatic configuration allows the Dual Homing and programmable key management functions to be addressed.

Note: if an SIP MD5 password is used, you have to implement authentication after manual login or else the terminal login will be rejected.

35.17.2 Massive deployment

This deployment method is used when the administrator wishes to register the terminals directly with Aastra 5000 without the user having to take any action.

This method allows a deployment to be made via an Excel form provided on the CD-ROM of the A5000 R5.4 software meant for deploying A6700i series terminals. This method requires modifying the configuration of the DHCP server so the A6700i series terminal connects to the account used for day-to-day management (ftp_6700i by default on an integrated FTP server).

The diagram below illustrates this method:
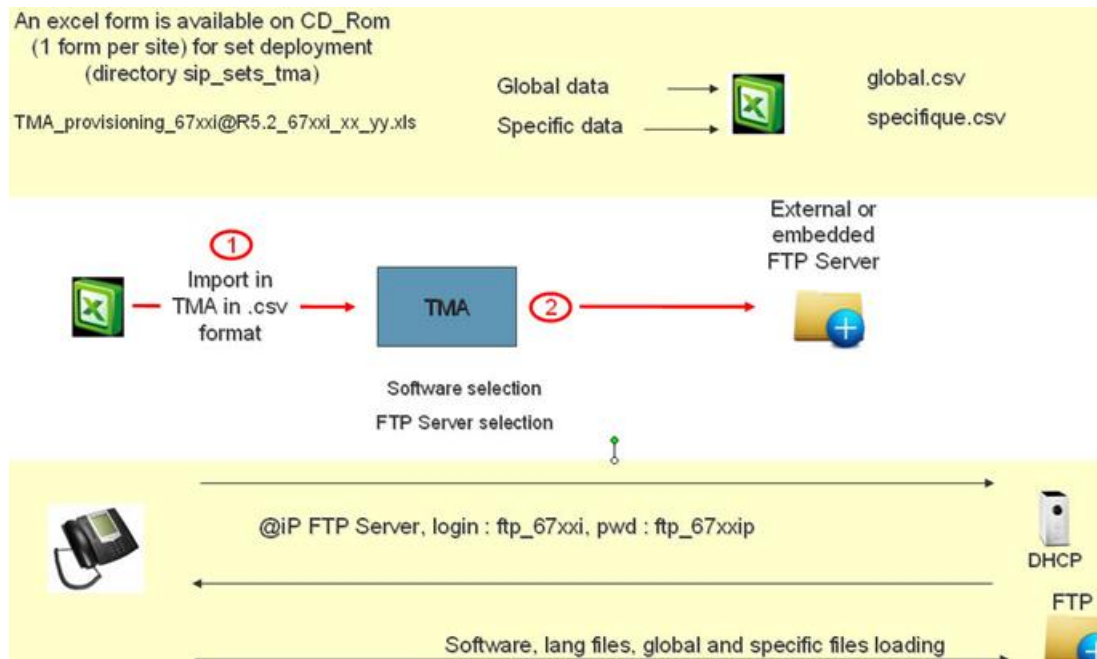
- A form is delivered on the A5000 R5.4 software CD-ROM. From this form the global and specific data of the terminals are collected and exported in .csv format. The specific data are indexed by the terminal's MAC address.

    The following parameters must be entered in the specific parameters file:

    - Terminal MAC address
    - Subscriber number

    The iPbx IP address is not required because of the login site optimisation.

- The operator then selects:
    - The global and specific data of A6700i series terminals in .csv format, to be imported into TMA
    - The terminal software package to be deployed
    - The integrated FTP server on which these data are stored.
- The operator validates the deployment operation: the terminal software, language files, global and specific data are then automatically placed on the integrated FTP server via some symbolic links.
- The operator connects the terminal to the LAN and this latter registers to his reference site via automatic login using the login site optimisation tool, if necessary.

Deployment may be made in the subnet; thus, the FTP server differs according to the subnet in which the terminal is declared. So, it is possible to spread the FTP server load during deployment.

35.17.3 Automatic DHCP and FTP server configuration

Case 1: deployment on an AX Series gateway – single-site configuration

To facilitate deployment, the configuration of DHCP and FTP servers on AXS gateways is optional. Once the administrator enters all the parameters, the file aastra.cfg is automatically generated and made available on the FTP server.

The DHCP server is automatically activated and reroutes the terminals to the FTP server on which the file aastra.cfg is located.

If the file aastra .cfg is not suitable for the administrator, the administrator may use TMA to create his own aastra.cfg. In this case, a template file is used to personalise aastra.cfg.

TMA then makes this new file available.

The administrator must create the link between the subscriber number and the terminal. This will be done by entering in each terminal the subscriber number for which is meant. This operation may be performed via the terminal's web interface or directly via the terminal interface, or through manual login.

Case 2: deployment on an AX Series gateway and A5000 server – multi-site configuration

The same behaviour as for case 1, except that when the terminal connects to the iPbx, the iPbx reroutes the terminal to the iPbx on which the terminal is declared.
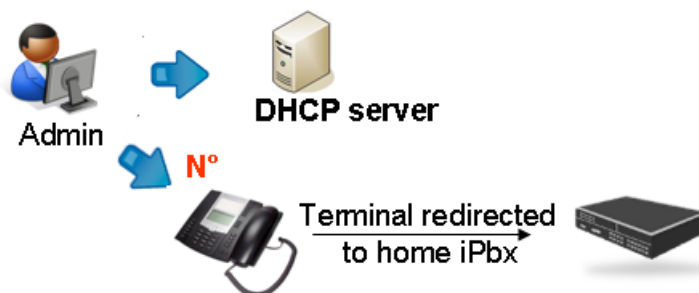
Note:

The following parameters must also be managed:

- iPbx address, backup iPbx address (for dual homing), the keys – parameters managed by the file @mac.cfg
- Numbering plan – parameters managed by the file aastra.cfg

Automatic configuration of these parameters can be disabled if the administrator wishes to configure them directly in the configuration files @mac.cfg and aastra.cfg.

Authentication management

To avoid entering the authentication password manually, the SIP password must be declared after deploying the terminal.

Management by TMA

Once the terminal is declared, it is seen by TMA. It is then possible to take an inventory of the terminals via their MAC address and associated subscriber number.

TMA enables the administrator to manage all the configuration parameters, but also to reroute the terminal to the right FTP server.

TMA also manages the terminals' software upgrades.

35.17.4 Other deployment methods for 6700i terminals:

To deploy some terminals on a single-site Aastra X Series system for which the integrated TMA is not used, the A6700i series terminals may be configured manually. This solution requires the presence of an integrated or external FTP server. The network parameters required by the terminal to work well are declared manually, either from the terminal or from the web interface.

These network parameters can also be configured and downloaded from the FTP server.

In this case, the integrated FTP server IP address, login and password associated with the user account used by the A6700i series terminals are the only network parameters that require a manual configuration.

Configuration files are made available manually on the FTP server storage area by the administrator.

Therefore, SIP terminals can also be deployed:

- Via the **terminal's web interface**:
    - Configuration of the terminal's @ IP via its configuration menus
    - Configuration of advanced parameters via the terminal's web interface
- Directly **from the terminal**:
    - Configuration of all parameters via the terminal's configuration menus

Aastra recommends configuring SIP terminals via a download server (via configuration files) using TMA for mass implementation (see previous sections: "Automatic deployment through manual login" and "Massive deployment"). This allows rational management of a terminal pool.

Therefore, the configuration will instead be used directly on the terminal or via the web interface for a reduced number of terminals.

Manual configuration via the terminal web interface or through direct access to the terminal:

- The administrator enters the subscriber number in the terminal. He thus creates a link between the subscriber number and the terminal. This may be done via the terminal interface ("options" key) or terminal web interface; the administrator's number is required in both cases.
- The administrator configures the DHCP server in order to communicate the FTP server IP address to the terminal.
- Via an Excel file imported by TMA, the administrator enters the general configuration parameters and the terminal's latest software release. It is also possible to choose the FTP server used. The general configuration parameters differ from one FTP server to the other.
- The terminal can then be connected to the working network.
    - The terminal obtains its network configuration parameters, as well as the FTP server parameters, from the DHCP server.
    - The terminal connects to the FTP server and loads the software and configuration files.
    - The terminal registers with the iPbx (information received from the DHCP or FTP server) by giving its subscriber number.
    - The iPbx finds the point where the terminal is declared and reroutes it to the right iPbx.
    - The terminal then registers with the right iPbx.
    - The iPbx configures on the terminal the IP addresses of the main iPbx and backup iPbx, the SIP terminal numbering plan, the keys.

Note: this method of deployment cannot be used with authentication.

Remark concerning terminal **6700i key management**: from R5.1C, the administrator can program the keys from AMP for one terminal type.

These are keys that have to be configured in the same way on all terminals of the same type:
This configuration can be carried out in either of the following two ways:
- Through manual file management: the administrator customises a file for each terminal type.
- With R5.1C, AMP (TMA) offers a configuration menu for all the functions defined by terminal type.

The following functions can be programmed:
- Do not disturb (DND)
- Service
- Directory
- Caller log
- ABC
- Transfer to voice mail
- Cancel voice mail transfer
- Direct voice mail call
- Transfer
- Conference
- Backup
- Deletion

For LCD label, the administrator may also define the label he wishes to see displayed on the installation keys.

A configuration template by terminal type is available, but can be modified by the administrator.

Templates management
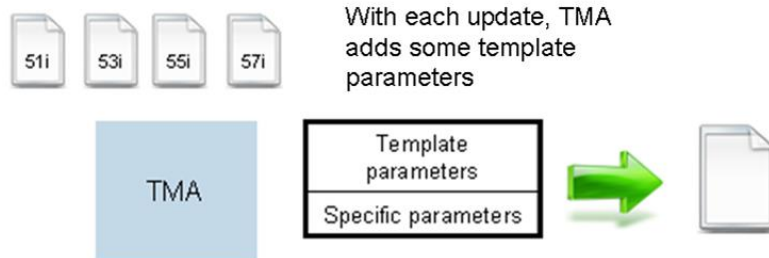
Configuration via the web interface:

First define the terminal IP address, either manually or via DHCP.

Just connect using a web browser: http://@IP_poste_SIP.

There are two access levels:
- Access in User mode
- Access in Administrator mode

The following parameters can be defined through the web interface:
- The web interface language
- The basic network parameters
- The SIP parameters
- The download server configuration
- Manual update of the SIP terminal 6700i firmware
- Language pack downloading to SIP terminals 6700i (can also be performed through a download server)
- Restoring the terminal's factory settings

The terminal-management web interface

Web interface

- In order to use the web interface you need to know the telephone's IP address
- Two access routes – via two passwords: administrator and user

35.18 XML browser integrated into Aastra 6700i terminals

An XML browser is incorporated into the SIP terminals (firmware) in the 6700i range. It lets external applications control the telephone display.

35.18.1 What is XML?

XML (**eXtensible Markup Language**) is equivalent to HTML.

HTML was designed to display information and concentrate on data representation.

XML was designed to display information and concentrate on **data description**: XML is used to separate content from presentation.This allows you, for instance, to display a document in different applications or peripherals without necessarily creating as many versions of the document as the required representations!

Main advantages of XML:

- **Legibility**: in theory, you do not need any special knowledge to understand the content of an XML document.
- It is a **self-descriptive** and **extendible** language.
- A **tree structure**: for creating a model of most computer problems
- **Universality** and **portability**: the different character sets are taken into account.
- **Deployable**: it can be easily distributed by any protocols capable of transporting text, such as HTTP.
- **Easy integration**: an XML document can be used by any application fitted with a parser (that is any software solution that can analyse an XML code).
- **Extendibility**: an XML document must be usable in any application domain.

Thus, XML is particularly suited to data and document exchange.

For further information on XML, visit the site http://www.xml.com

Example of XML description:

```
<AastraIPPhoneTextMenu>
<Title>Phone Services</Title>
<MenuItem base = "http://10.50.10.53/">
<Prompt>Traffic Reports</Prompt>
<URI> rss_to_xml.pl</URI>
</MenuItem>
<MenuItem>
<Prompt>Employee List</Prompt>
<URI>employees.xml</URI>
</MenuItem>
<MenuItem base ="">
<Prompt>Weather</Prompt>
<URI>http://10.50.10.52/weather.pl</URI>
</MenuItem>
</AastraIPPhoneTextMenu>
```

Corresponding display on a 6755i terminal:

35.18.2 Which XML applications on an SIP phone?

35.18.2.1 Telephony applications

This paragraph gives some examples of XML telephony applications which could be developed to improve the integration of an SIP phone with other telecommunication applications.

Directory

The first obvious application that may be developed is a directory application, including:

- The iPbx directory
- The company directory (global list obtained from a Microsoft Exchange server)
- Private contacts (My contacts in Outlook)
- A (public or private) directory.

From R5.1 Aastra provides an XML application giving access to the Aastra LDAP directory.

Call processing

XML applications can also be used to develop interactions between call processing and the SIP phone:

- Do Not Disturb
- Call forwarding
- Parked calls
- Call pick-up
- iPbx configuration

35.18.2.2 Vertical applications

This paragraph gives examples of XML applications that could be developed for SIP terminals 6700i. The list is not exhaustive.

Human resources

- Available holidays
- Arrival – departure time (clocking in/off)

Travel / hotel

- Ordinary bill
- Room meal order
- Meal delivery options
- Stay extension
- Time table for airport shuttles
- Cleaning or repair service request
- Wake-up function

Health

- Examination results
- Appointment management
- Appointment reminder
- Reminder to take medicines
- Meal order in the hospital
- Stock control at the dispensary
- Planning of blood donations

Education

- Lesson attendance
- Request for substitute teachers
- List of existing requests for substitute teachers
- Class timetable
- Information for parents

General

- Monitoring postal packages
- Reserving meeting rooms
- Results of sporting events
- Music-on-hold options
- Translation
- Daily horoscope
- The joke of the day

Legal application

- Escape alerts
- Child-kidnapping alerts

Improvement of communication services

- Directory Access: search, display, selection, dialling
- Voice Mail: listing, read, delete, transfer
- State programming functions: Do Not Disturb, transfer, forwarding, waiting call
- Free Seating: log out, change of phone, log in
- Self-discovery & Self Provisioning

Collaborative functions

- Conference Manager: edition of participants, mute
- Meeting Request
- Supervision and interception

Others

- Weather forecast alerts
- World time / weather
- Account balance
- Server status
- Fuel prices
- Movie schedules and programmes
- Ordering flowers
- Sending text messages

35.18.2.3 Examples of value-added business applications

Management of student presence in a class

- The teacher enters the classroom and sign up from his SIP terminal:

- The teacher indicates the presence of students:
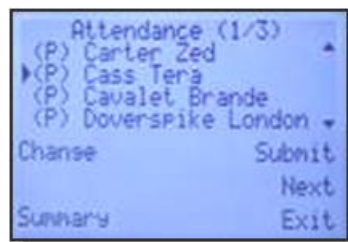
- Then a report is edited (number of present / absent) and submitted to the administration:
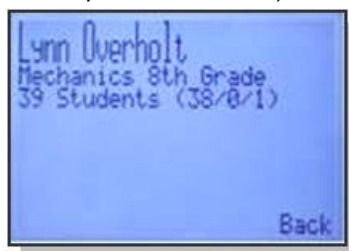
Ordering food from the hotel room / hospital:

The customer places an order directly from the terminal:

- Starter
- Main course
- Dessert

An order confirmation is displayed with its price:

Collaborative work: meeting request

Appointment requests are made directly from the terminal. The program is done as follows:

- Choice of the employee
- Display of a screen for entering the information of the object and the date of appointment
- Transmission of the appointment information as an invitation to the target person (XML push)
- If the employee accepts the appointment, his schedule is then updated, otherwise the application terminates

Collaborative work: presence status management

The user manages and shares his presence status:

- Available
- Absent
- Out for lunch
- At a meeting
- Out of office

When the user is not available, the application allows him to:

- Enter a date / time of return
- Record a temporary greeting message.

The presence information is stored in a database and made available to other users via the directory or via the outgoing call log.

MP3 Player

This application enables a user to select and play an MP3 file on his SIP terminal. The MP3 file is stored on a server or database.
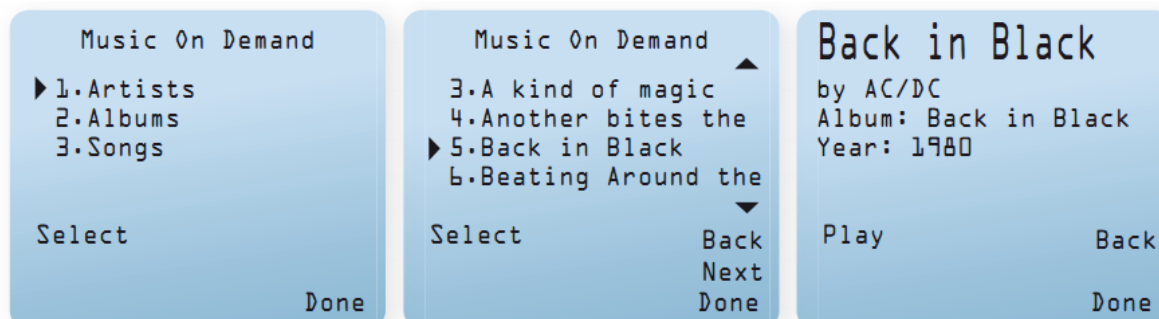
Web 2.0: posting a tweet

Principle

- The user creates a tweet and can then publish it.

- He can access his own Tweeter timeline in the same way as from his Twitter account, from the internet.
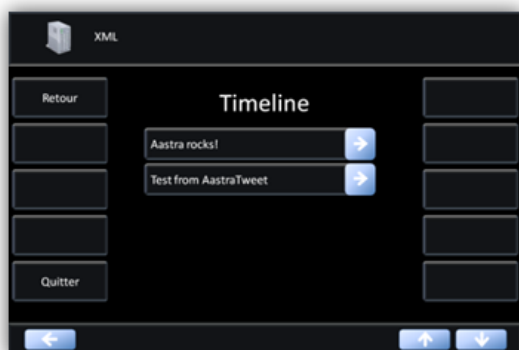
35.18.3 How does it work?

Taking advantage of the IP infrastructure, Aastra decided to develop the browser function on the telephone using the HTTP transfer protocol because direct HTML support would not be suited to the telephone's capacity and screen. So Aastra decided that only XML objects should be supported in the browser.

SIP 6730/31i, 6755i, 6757i and 6739i telephones support two types of applications:

- Phone-based applications
- Server-based applications

35.18.3.1 Terminal-based application

Terminal 6700i sends an HTTP (or HTTPS) GET command to the web server; it waits for a reply, decodes and displays it on its screen like any other web browser (Microsoft Internet Explorer or Firefox) would do in its capacity as a web client.

This may be done from a personalised software key on the terminal and on the list of personalised functions.

SIP 6700i terminal behaving like a client
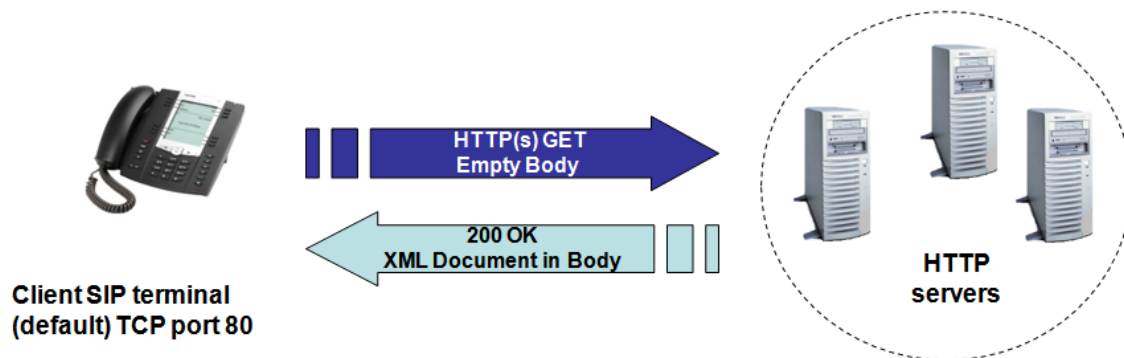
35.18.3.2 Server-based applications

An application may send an XML object to the SIP terminal, which may be used for alert applications, for instance. In this case, the terminal acts as a "limited" web server.

SIP 6700i terminal behaving like a server
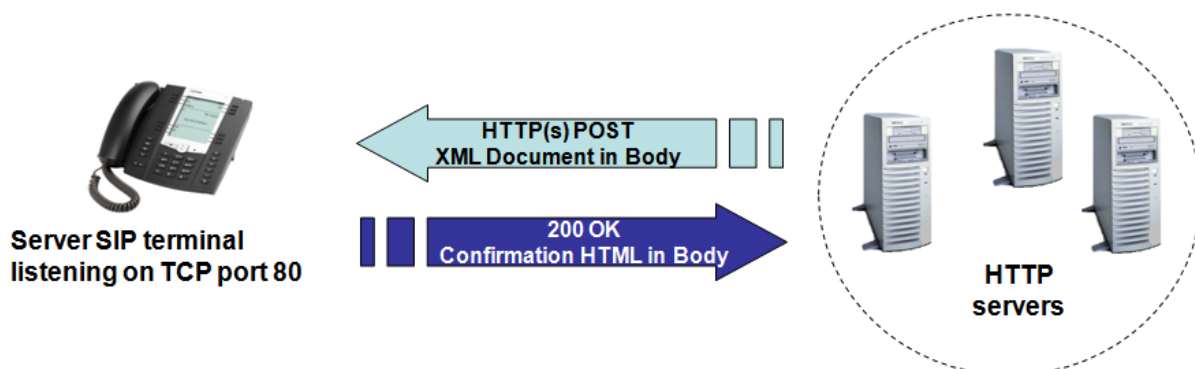
35.18.4 System architecture

XML applications may be hosted by one or more web servers used as proxy for other applications or for internet web servers.

35.18.4.1 Internal application

The diagram below gives a detailed description of the architecture that allows an Aastra SIP terminal to access an internal application. The application hosted by the web server translates requests from the terminal into a protocol specific to the target application and formats the reply into an XML object to be displayed on the terminal.
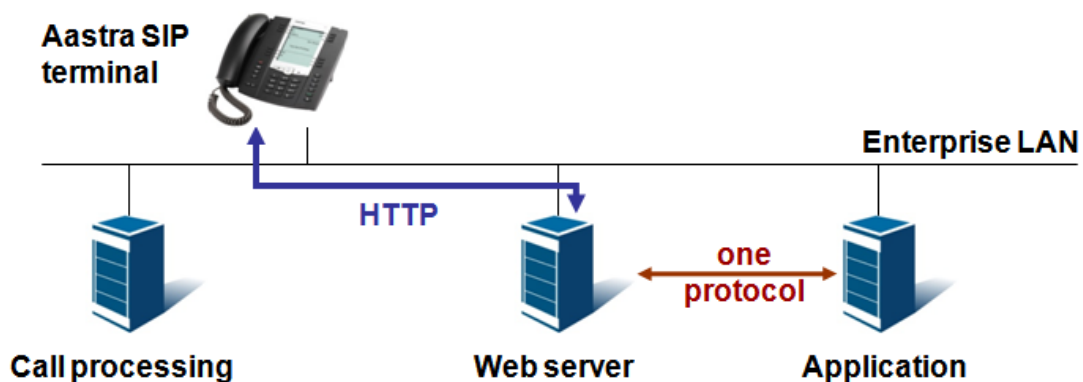
35.18.4.2 Internet application

The diagram below gives a detailed description of an XML application which attempts to retrieve Internet data like, for example, a service used at the stock market to display stock values in real time.

Note: for some non-real-time web applications, the Internet content may be stored in cache memory on the XML web server for quicker access.
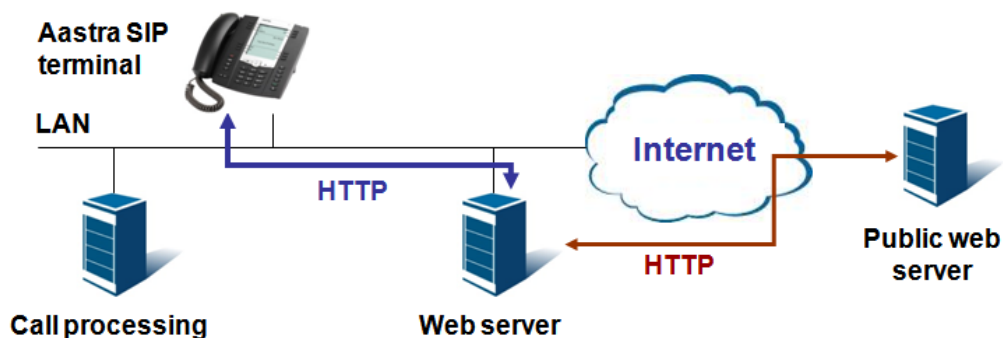
35.18.4.3 Telephony application

The diagram below gives a detailed description of an XML application that would provide additional telephony services on the terminal.

For instance, the application may:

- Show the list of parked calls and make an interception
- Activate call forwarding or the "Do not Disturb" function on the server side
- Control a conference call from a terminal
- Login/logout from a call centre and access the voice mail system

Access to a telephony application
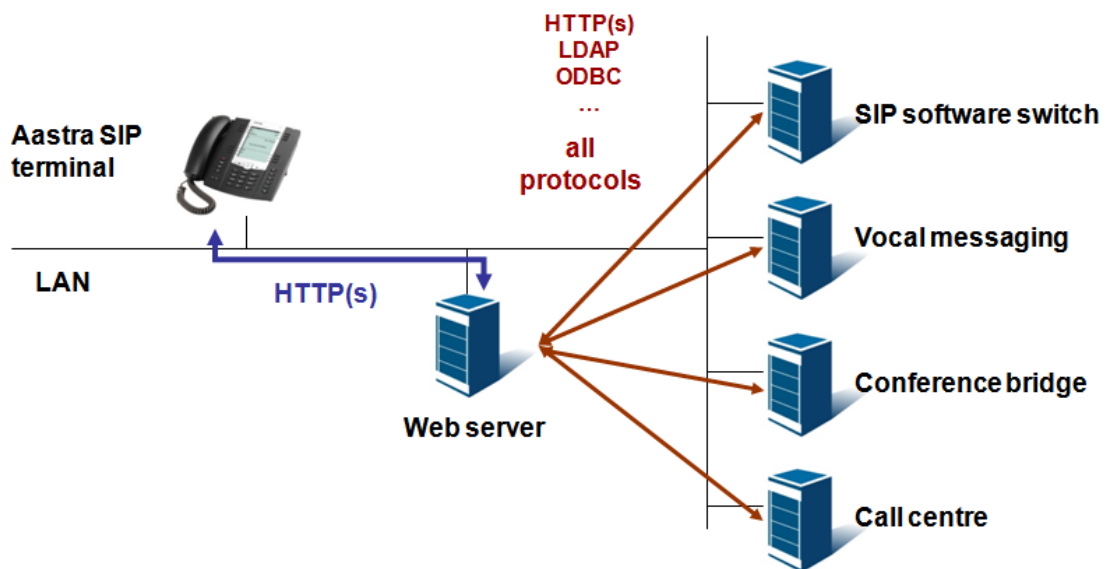
35.18.5 Development environment

Typical software architecture of an XML application
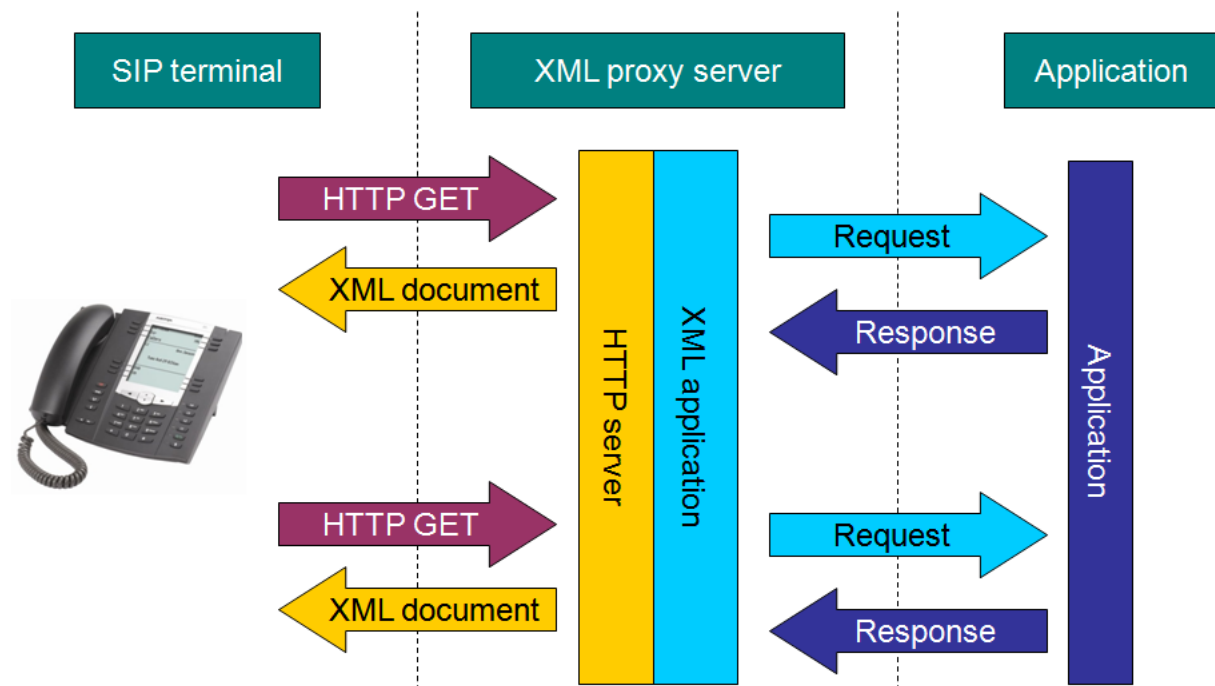
35.18.5.1 Web server

There is no constraint in terms of the choice of the web server to use for XML applications. The choice is rather related to the necessary development tools such as the script language, company policy or the cost of platform.

The most widely supported web server applications are:

- Apache (http://www.apache.org) for Microsoft and Linux operating systems
- Microsoft IIS for Microsoft operating systems
- Netscape iPlanet

35.18.5.2 Scripts / Languages

Like for the web server, there is no specific constraint regarding the choice of application development tools. All the languages supported and used to develop a web application are supported and can be used to develop XML applications.

The most common are:

- Compiled languages: C, C++
- Script languages: VBscript, Perl, Python, PHP, asp, etc.

35.18.5.3 XML validation tools

A large number of tools are available for validating an XML document sent to a terminal 5xi. These tools use the XSD model to check the document syntax.

Example of available web tools: http://tools.decisionsoft.com/schemaValidate/

35.18.5.4 XML format

An XML object text must comply with XML recommendations, and the special characters must be coded in form of escape sequences.

35.18.6 Available XML features

The XML browser of SIP 6700i terminals allows developers to create customised services which can be used via the terminal's keypad and displayed on its screen.
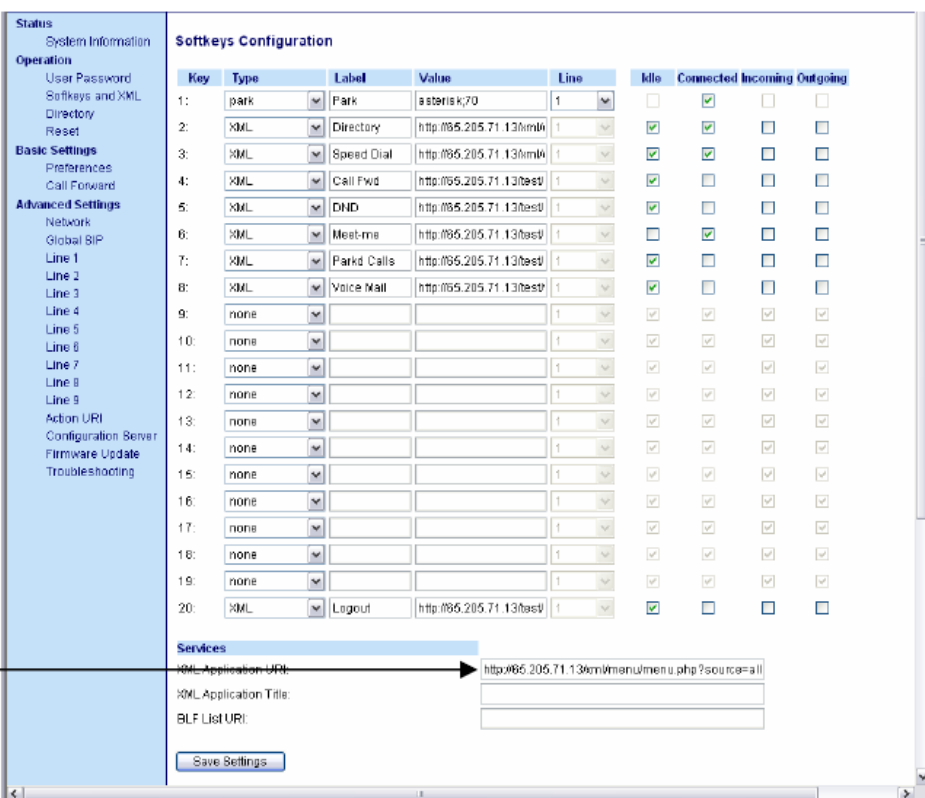
With release 2.0 of the firmware, the XML APIs of 6700i terminals support 10 proprietary objects which can be used to create effective XML applications. These objects are public objects and are made available to customers / integrators for the development of customised applications.

For further information about these objects, refer to the document "Development Guide - XML API for Aastra SIP Phones".

35.18.7 XML configuration

After creating an XML application to be executed on the SIP terminal, the application may be viewed / run like a service via a key.

Example of the configuration of a customized service